ESSENTIALS OF LINGUISTICS



Catherine Anderson
McMaster University



McMaster University
Essentials of Linguistics

Catherine Anderson

This text is disseminated via the Open Education Resource (OER) LibreTexts Project (https://LibreTexts.org) and like the thousands of other texts available within this powerful platform, it is freely available for reading, printing, and "consuming."

The LibreTexts mission is to bring together students, faculty, and scholars in a collaborative effort to provide an accessible, and comprehensive platform that empowers our community to develop, curate, adapt, and adopt openly licensed resources and technologies; through these efforts we can reduce the financial burden born from traditional educational resource costs, ensuring education is more accessible for students and communities worldwide.

Most, but not all, pages in the library have licenses that may allow individuals to make changes, save, and print this book. Carefully consult the applicable license(s) before pursuing such effects. Instructors can adopt existing LibreTexts texts or Remix them to quickly build course-specific resources to meet the needs of their students. Unlike traditional textbooks, LibreTexts' web based origins allow powerful integration of advanced features and new technologies to support learning.



LibreTexts is the adaptable, user-friendly non-profit open education resource platform that educators trust for creating, customizing, and sharing accessible, interactive textbooks, adaptive homework, and ancillary materials. We collaborate with individuals and organizations to champion open education initiatives, support institutional publishing programs, drive curriculum development projects, and more.

The LibreTexts libraries are Powered by NICE CXone Expert and was supported by the Department of Education Open Textbook Pilot Project, the California Education Learning Lab, the UC Davis Office of the Provost, the UC Davis Library, the California State University Affordable Learning Solutions Program, and Merlot. This material is based upon work supported by the National Science Foundation under Grant No. 1246120, 1525057, and 1413739.

Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation nor the US Department of Education.

Have questions or comments? For information about adoptions or adaptions contact info@LibreTexts.org or visit our main website at https://LibreTexts.org.

This text was compiled on 04/14/2026

TABLE OF CONTENTS

Licensing

1: Thinking Like a Linguist

- 1.1: Linguistics is Science
- 1.2: Mental Grammar
- 1.3: Creativity and Generativity
- 1.4: Fundamental Properties of Language
- 1.5: Practice Time
- 1.6: Summary

2: Producing Speech Sounds

- 2.1: Practice Time
- 2.2: Summary
- 2.3: Chapter 3- Transcribing Speech Sounds
- 2.4: How Humans Produce Speech
- 2.5: Practice Time
- 2.6: Summary
- 2.7: Articulators
- 2.8: Describing Speech Sounds- the IPA
- 2.9: 2.4- IPA symbols and speech sounds
- 2.10: Sonority, Consonants, and Vowels
- 2.11: Classifying Consonants
- 2.12: Classifying Vowels
- 2.13: Diphthongs
- 2.14: Various Accents of English

3: Speech Sounds in the Mind

- 3.1: Broad and Narrow Transcription
- 3.2: IPA for Canadian English
- 3.3: Syllabic Consonants
- 3.4: Aspirated Stops in English
- 3.5: Articulatory Processes- Assimilation
- 3.6: Other Articulatory Processes
- 3.7: Practice Time
- 3.8: Summary
- 3.9: Suprasegmentals
- 3.10: Transcribing Casual Speech

4: Psycholinguistics of Learning Sounds

- 4.1: Phonemes and Contrast
- 4.2: Allophones and Predictable Variation
- 4.3: Phonetic Segments and Features
- 4.4: Practice Time
- 4.5: Natural Classes

- 4.6: Summary
- 4.7: Phonological Derivations

5: Word Forms

- 5.1: How Babies Learn the Phoneme Categories of Their Language
- 5.2: How Adults Learn the Phoneme Categories in a New Language
- 5.3: Practice Time
- 5.4: Summary

6: Combining Words

- 6.1: Words and Morphemes
- 6.2: Allomorphs
- 6.3: Inflectional Morphology
- 6.4: Derivational Morphology
- 6.5: Inflectional Morphology in Some Indigenous Languages
- 6.6: Practice Time
- 6.7: Summary

7: Forming Sentences

- 7.1: Practice Time
- 7.2: Summary
- 7.3: Nouns, Verbs and Adjectives- Open Class Categories
- 7.4: Compound Words
- 7.5: Closed Class Categories (Function Words)
- 7.6: Auxiliaries
- 7.7: Neurolinguistics- Syntactic Category Differences in the Brain

8: Sentence Structure and Meaning

- 8.1: Wh-Movement
- 8.2: Do-Support
- 8.3: Psycholinguistics- Traces in the Mind
- 8.4: Tree Diagrams
- 8.5: X-bar Phrase Structure
- 8.6: Constituents
- 8.7: Sentences are Phrases
- 8.8: English Verb Forms
- 8.9: Practice Time
- 8.10: Subcategories
- 8.11: Grammatical Roles
- 8.12: Summary
- 8.13: Adjuncts
- 8.14: Move

9: Word Meanings

- 9.1: Ambiguity
- 9.2: Events, Participants, and Thematic Roles
- 9.3: Thematic Roles and Passive Sentences
- 9.4: Neurolinguistics- Using EEG to Investigate Syntax and Semantics

- 9.5: Practice Time
- 9.6: Neurolinguistics and Second Language Learning
- 9.7: Summary

10: Indigenous Languages

- 10.1: Elements of Word Meaning- Intensions and Extensions
- 10.2: Intensions in the Mind
- 10.3: Psycholinguistics of Word Meanings
- 10.4: Practice Time
- 10.5: Summary

11: Back Matter Tests

- 11.1: Indigenous Languages and the Legacy of Residential Schools
- 11.2: Testing Keys
- 11.3: Preserving Mohawk
- 11.4: Learning Mohawk
- 11.5: Mohawk Culture and Language
- 11.6: Creating Materials for Teaching Mohawk
- 11.7: Speaking Mohawk and Reconciliation
- 11.8: The Future of Indigenous Languages in Canada

Index

Index

Glossary

Detailed Licensing

Licensing

*A detailed breakdown of this resource's licensing can be found in **Back Matter/Detailed Licensing**.*

CHAPTER OVERVIEW

1: Thinking Like a Linguist

1.1: Linguistics is Science
1.2: Mental Grammar
1.3: Creativity and Generativity
1.4: Fundamental Properties of Language
1.5: Practice Time
1.6: Summary

This page titled 1: Thinking Like a Linguist is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

1.1: Linguistics is Science

This unit introduces the idea of thinking scientifically about language by making empirical observations rather than judgments of correctness.



A YouTube element has been excluded from this version of the text. You can view it online here: https://ecampusontario.pressbooks.pub/essentialsoflinguistics/?p=22

Check Yourself

1. What does it mean to say that Linguistics is a science?

- The field consists of a set of true facts that can be proven objectively.
- The field uses the scientific method to determine objective rankings of language quality.
- The field uses empirical observations to develop theories of language behaviour.

2. Each of the following sentences represents something someone might say about language. Which of them illustrates a descriptive view of language?

- The use of quotative *like* in sentences such as, “She was like, I can’t believe you did that!” began to enter Canadian English with the generation of speakers born in 1971.
- The song “I can’t get no satisfaction” should really mean that “I can get some satisfaction” because two negatives always make a positive.
- In a phrase like, “the people who the bride invited to the wedding,” it’s proper to use *whom* rather than *who*.

3. Which of the following kinds of data would a linguist be likely to observe?

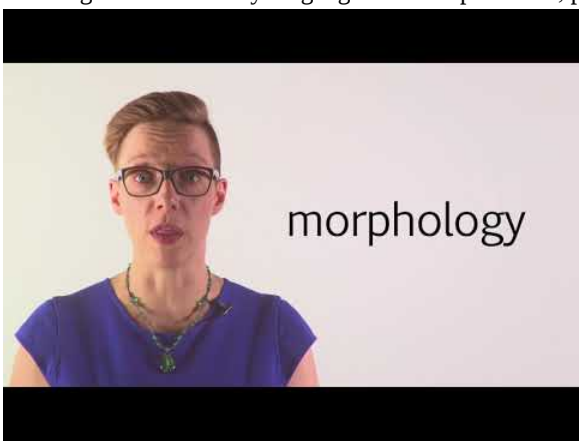
- Which method is most effective to help a child stop stuttering.
- Whether Korean includes tones that change the meaning of words.
- How many undergraduates can correctly use the words *affect* and *effect* in their essays.
- If second-language speakers can pronounce English words correctly.

Answers

This page titled 1.1: Linguistics is Science is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

1.2: Mental Grammar

Linguistics is part of the broad field of cognitive science, which studies the human mind. Linguistics focus specifically on the mental grammar: the system that all speakers of a language have in their minds, which allows them to understand each other. The mental grammar of every language includes phonetics, phonology, morphology, syntax, and semantics.



A YouTube element has been excluded from this version of the text. You can view it online here: https://ecampusontario.pressbooks.pub/essentialsoflinguistics/?p=24

Check Yourself

1. Newspaper headlines occasionally have unexpectedly funny interpretations. One example is: *Two cars were reported stolen by the police yesterday*. Which part of your mental grammar leads to the possibility that the police could have done the stealing or the reporting in this headline?

- Phonetics.
- Phonology.
- Morphology.
- Syntax.
- Semantics.

2. Newfoundland English has some characteristic differences to standard Canadian English. The following sentences are grammatical in Newfoundland English: *I eats toast for breakfast every day. You knows the answer to that question*. What part of the mental grammar of Newfoundland English is different to Canadian English in these examples?

- Phonetics.
- Phonology.
- Morphology.
- Syntax.
- Semantics.

3. When speakers of Hawaiian pronounce the English phrase, “Merry Christmas”, it sounds like: *mele kalikimaka*. What part of the mental grammar of Hawaiian is responsible for how the English phrase gets pronounced?

- Phonetics.
- Phonology.
- Morphology.
- Syntax.
- Semantics.

Answers

This page titled 1.2: Mental Grammar is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

1.3: Creativity and Generativity

The foremost property of mental grammar is that it is **generative**: it allows each speaker to **create** new words and sentences that have never been spoken before. The mental grammar **generates** these new words and sentences according to systematic principles that every speaker knows unconsciously.



A YouTube element has been excluded from this version of the text. You can view it online here: https://ecampusontario.pressbooks.pub/essentialsoflinguistics/?p=26

Check Yourself

1. What does it mean to say that mental grammar is generative?

- Every child inherits a mental grammar through their genes.
- Some languages can generate concepts that are impossible to express in other languages.
- The principles of mental grammar allow us to form completely novel sentences, and to understand them when we hear them.

2. The systematic principles of English phonology generate some word forms but not others. Which of the following words could be a possible word in English?

- Klaff.
- Fkal.
- Flakf.
- Sflak.

3. The systematic principles of English syntax generate some sentences but not others. Which of the following sentences is not possible in English?

- You ain’t going nowhere.
- Herself have wrote these excellent book.
- Sam said she needed to speak to Chris and me.
- This expedition aims to boldly go where no expedition has gone before.

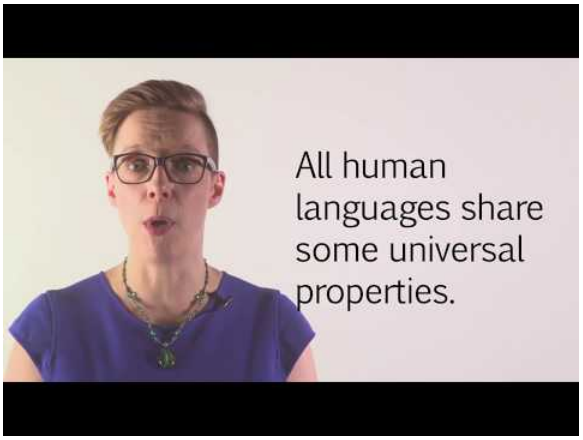
Answers

This page titled 1.3: Creativity and Generativity is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

1.4: Fundamental Properties of Language

This unit addresses some of the common myths that people believe about languages, and responds to these misconceptions with fundamental truths about human language:

- All languages have a grammar.
- All languages & grammars are equally valid, in linguistic terms.
- All languages have some universal properties in common.
- Every language changes over time.
- Most of our knowledge of the mental grammar of our language is unconscious.



A YouTube element has been excluded from this version of the text. You can view it online here: https://ecampusontario.pressbooks.pub/essentialsoflinguistics/?p=28

Check Yourself

1. It's important to study Latin because Latin is more logical than other languages.

- True.
- False.

2. Spending too much time texting will ruin your ability to write proper English.

- True.
- False.

3. The dictionary gives the only correct meaning and pronunciation for words.

- True.
- False.

Answers

This page titled 1.4: Fundamental Properties of Language is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

1.5: Practice Time

Exercise 1. Generate a sentence of English that you have never, ever uttered or heard before. Have a friend do the same thing. Exchange sentences with your friend. Were you able to understand each other's sentences? How could you understand them, even though you had never heard them before?

Exercise 2. Pretend you're working for a start-up. Your company has developed a very cool new product, and they turn to you, the linguist, to come up with a name for this new product. It has to be a unique name that doesn't already exist. What will you name your company's cool new product?

Now, look at this list of product names generated by other students. Which of them are good product names and which aren't? What makes something a good name?

mentocular	swoodiei	torrix	baizan
jibberdab	keerild	euquinu	tuitionary
kzen	zirka	hbiufk	fluxon

Exercise 3. Think of a word that has only recently entered English, so it's not yet in mainstream dictionaries. Observe some examples of the word being used in context, either in your regular conversations or by searching online. Based on your observations of the word in context, write a dictionary definition of the word.

Exercise 4. Think about all the languages that you speak, or about a variety of language that you've heard spoken by someone you know. Make two scientific observations about that language or a variety. Your observations might be about the sounds of the language, about the words, about how the sentences are organized, or about how people use different elements of the language. Remember that scientific observations are descriptive, not prescriptive.

This page titled 1.5: Practice Time is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

1.6: Summary

We've now seen that the field of linguistics approaches the study of language from a scientific point of view. As linguists, we seek to make systematic, descriptive observations about human language behaviour. From these empirical observations, linguists have learned that every speaker of every human language has a mental grammar. And the mental grammar of every language includes systematic principles for how sounds (or hand signs, in a signed language) are made, for how these sounds or signs are organized into words, for how words and smaller pieces of words are combined to form phrases and sentences, and for how we assign meaning to words and sentences. When we speak our language, we use our mental grammar to generate new phrases and sentences, and the people who listen to us use their mental grammar to understand us.

This page titled 1.6: Summary is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

CHAPTER OVERVIEW

2: Producing Speech Sounds

2.1: Practice Time
2.2: Summary
2.3: Chapter 3- Transcribing Speech Sounds
2.4: How Humans Produce Speech
2.5: Practice Time
2.6: Summary
2.7: Articulators
2.8: Describing Speech Sounds- the IPA
2.9: 2.4- IPA symbols and speech sounds
2.10: Sonority, Consonants, and Vowels
2.11: Classifying Consonants
2.12: Classifying Vowels
2.13: Diphthongs
2.14: Various Accents of English

This page titled 2: Producing Speech Sounds is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

2.1: Practice Time

Exercise 1. For each of the following words, give the IPA symbol and the articulatory description for the first sound in the word:

- thumb
- knee
- rainbow
- gym
- holiday

Exercise 2. For each of the following words, give the IPA symbol and the articulatory description for the vowel sound in the word:

- desk
- spill
- weight
- duck
- boost

Exercise 3. For each of the following words, give the IPA symbol and the articulatory description for the last sound in the word:

- lamb
- crave
- fling
- dill
- frog

Exercise 4. Listen to these speakers of Australian English and Canadian English compare their pronunciations of various words.



A YouTube element has been excluded from this version of the text. You can view it online here: ecampusontario.pressbooks.pu...guistics/?p=57

Pay special attention to the word *leisure*. As accurately as you can, describe the difference between the two pronunciations using the new vocabulary you've learned in Chapter 2.

(This exercise is adapted from Linguistics 001: Introduction to Linguistics by Mark Liberman. Used with permission.)

This page titled 2.1: Practice Time is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

2.2: Summary

In this chapter, you've learned that speaking and listening are the primary linguistic skills, and you've started to learn to think about words in terms of their sounds and not their letters. You know the names of the parts of the body that humans use to produce speech, and you know how to classify consonants and vowels according to how they're produced. In the next Chapter, you'll get more practice at using the International Phonetic Alphabet to transcribe the sounds of Canadian English.

This page titled 2.2: Summary is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

2.3: Chapter 3- Transcribing Speech Sounds

Chapter 3: Transcribing Speech Sounds

Now that you know how humans use their articulators to produce speech, and how linguists classify speech sounds, you're ready to learn how to use the International Phonetic Alphabet to transcribe speech sounds. In this chapter, we learn some of the principles for doing a phonetic transcription of the sounds of Canadian English.

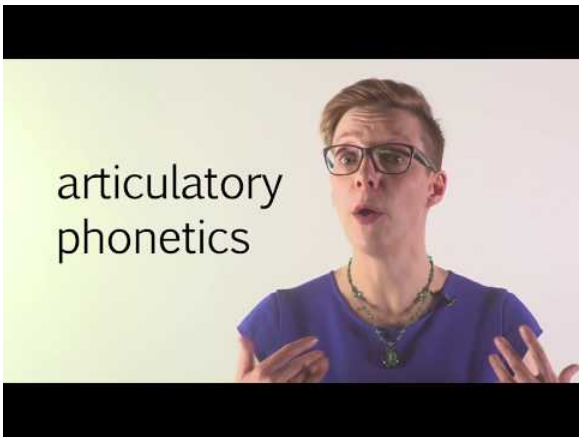
When you've completed this chapter, you will be able to:

- distinguish between broad and narrow transcription,
- use the IPA to transcribe words and sentences of Canadian English,
- recognize some of the predictable processes that affect speech sounds and narrow transcription.

This page titled 2.3: Chapter 3- Transcribing Speech Sounds is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

2.4: How Humans Produce Speech

Phonetics studies human speech. Speech is produced by bringing air from the lungs to the larynx (respiration), where the vocal folds may be held open to allow the air to pass through or may vibrate to make a sound (phonation). The airflow from the lungs is then shaped by the articulators in the mouth and nose (articulation).



A YouTube element has been excluded from this version of the text. You can view it online here: ecampusontario.pressbooks.pu...guistics/?p=37

Check Yourself

1. What is the voicing of the last sound in the word *soup*?

- Voiced.
- Voiceless.

2. What is the voicing of the last sound in the word *life*?

- Voiced.
- Voiceless.

3. What is the voicing of the last sound in the word *seem*?

- Voiced.
- Voiceless.

Answers

This page titled 2.4: How Humans Produce Speech is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

2.5: Practice Time

The following sentences are all the first lines of books. For each, provide an IPA transcription, as narrow as you are able, of how the sentence would be spoken in Canadian English. (Do not try to transcribe the title of the novel or the author's name.)

1. There was no possibility of taking a walk that day. (Charlotte Brontë, *Jane Eyre*)
2. It was a bright cold day in April and the clocks were striking thirteen. (George Orwell, *Nineteen Eighty-Four*)
3. The past is a foreign country: they do things differently there. (L. P. Hartley, *The Go-Between*)
4. You better not never tell nobody but God. (Alice Walker, *The Color Purple*)
5. All happy families are alike; each unhappy family is unhappy in its own way. (Leo Tolstoy, *Anna Karenina*)
6. This is the saddest story I have ever heard. (Ford Madox Ford, *The Good Soldier*)
7. I have never begun a novel with more misgiving. (W. Somerset Maugham, *The Razor's Edge*)
8. I write this sitting in the kitchen sink. (Dodie Smith, *I Capture the Castle*)
9. Time is not a line but a dimension, like the dimensions of space. (Margaret Atwood, *Cat's Eye*)
10. In an old house in Paris that was covered with vines lived twelve little girls in two straight lines. (Ludwig Bemelmans, *Madeline*)
11. One sunny Sunday, the caterpillar was hatched out of a tiny egg. (Eric Carle, *The Very Hungry Caterpillar*)
12. In a hole in the ground there lived a hobbit. (J. R. R. Tolkien, *The Hobbit*)
13. Down in the valley there were three farms. (Roald Dahl, *Fantastic Mr. Fox*)
14. The women of this family leaned towards extremes. (Jane Urquhart, *Away*)
15. I seem to have trouble dying. (Lawrence Hill, *The Book of Negroes*)
16. The river flowed both ways. (Margaret Laurence, *The Diviners*)
17. My name is unimportant. (Nicolas Dickner, *Nikolski*)
18. My house stands at the edge of the earth. (Ami McKay, *The Birth House*)

This page titled 2.5: Practice Time is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

2.6: Summary

You have now had a good deal of practice at transcribing words and sentences in Canadian English, including the salient phonetic details for narrow IPA transcription of English. You're starting to see that there can be variability in how a given segment is pronounced, even if it gets represented with a single IPA symbol. Articulatory processes play a sizeable role in how speech sounds vary, and suprasegmental information contributes to variability as well. In the next chapter, we'll see how the mind responds to the variability that our articulators produce.

This page titled 2.6: Summary is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

2.7: Articulators

Speaking involves controlling parts of the mouth and nose to shape the air that comes from the lungs. This unit introduces the names and locations of the articulators that are used to produce the sounds of English: the tongue, lips and teeth, the alveolar ridge, the palate, the velum, and the nasal cavity.



A YouTube element has been excluded from this version of the text. You can view it online here: ecampusontario.pressbooks.pu...guistics/?p=40

Check Yourself

1. Which articulators are responsible for the first sound in the word *minor*?

- Lips.
- Lips and teeth.
- Tongue and teeth.
- Tongue and alveolar ridge.
- Tongue and palate.
- Tongue and velum.

2. Which articulators are responsible for the final sound in the word *wit*?

- Lips.
- Lips and teeth.
- Tongue and teeth.
- Tongue and alveolar ridge.
- Tongue and palate.
- Tongue and velum.

3. Which articulators are responsible for the first sound in the word *photography*?

- Lips.
- Lips and teeth.
- Tongue and teeth.
- Tongue and alveolar ridge.
- Tongue and palate.
- Tongue and velum.

Answers

This page titled 2.7: Articulators is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

2.8: Describing Speech Sounds- the IPA

This unit introduces the International Phonetic Alphabet, a system for accurately transcribing speech sounds. The IPA is useful because it is unambiguous: each symbol always represents the same sound, and each sound is always represented by the same symbol.



A YouTube element has been excluded from this version of the text. You can view it online here: ecampusontario.pressbooks.pu...guistics/?p=42

Check Yourself

1. The vowel sounds in the words *neat* and *spread* are both spelled “ea”. Do the vowels in the two words sound the same as each other or different?

- Same.
- Different.

2. Are the final sounds in the words *face* and *mess* the same as each other or different?

- Same.
- Different.

3. Are the first sounds in the two words *gym* and *gum* the same as each other or different?

- Same.
- Different.

Answers

This page titled 2.8: Describing Speech Sounds- the IPA is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

2.9: 2.4- IPA symbols and speech sounds

The following tables give you some sample words so you can start to learn which IPA symbols correspond to which speech sounds. In these tables, the portion of the English word that makes the relevant sound is indicated in boldface type, but remember that English spelling is not always consistent, and your pronunciation of a word might be a little different from someone else's. These examples are drawn from the pronunciation of mainstream Canadian English. To hear an audio-recording of the sound for each IPA symbol, consult the consonant, vowel, and diphthong charts available here.

The sounds are categorized here according to how they're produced. You'll learn more about these categories in units 2.6, 2.7 and 3.2.

Stops

[p]	**p**each, a**pp**le, ca**p**
[b]	**b**ill, a**b**ove, ri**b**
[t]	**t**all, in**t**ernal, ligh**t**
[d]	**d**ill, a**d**ore, ki**d**
[k]	**c**ave, ti**ck**et, lu**ck**
[ɡ]	**g**ive, ba**gg**age, di**g**

Fricatives

[f]	**ph**one, ra**ff**le, lea**f**
[v]	**v**ideo, li**v**ely, lo**v**e
[θ]	**th**in, au**th**or, ba**th**
[ð]	**th**ere, lea**th**er, brea**th**e
[s]	**c**elery, pa**ss**ing, bu**s**
[z]	**z**ebra, depo**s**it, shoe**s**
[ʃ]	**sh**ell, o**c**ean, ru**sh**
[ʒ]	**g**enre, mea**s**ure, rou**ge**
[h]	**h**ill, a**h**ead

Affricates

[tʃ]	**ch**ip, a**ch**ieve, di**tch**
[dʒ]	**j**ump, a**dj**oin, bri**dge**

Nasals

[m]	**m**ill, ha**mm**er, broo**m**
[n]	**n**ickel, su**nn**y, spoo**n**
[ŋ]	si**ng**er, wro**ng**

Approximants

[l]	**l**amb, si**ll**y, fa**ll**
[ɹ]	**r**obot, fu**rr**y, sta**r**
[j]	**y**ellow, ro**y**al
[w]	**w**inter, flo**w**er

Flap

[ɾ]	bu**tt**er, pe**d**al (*only between vowels when the second syllable is unstressed*)

Front Vowels

[i]	s**ee**, n**ea**t, p**ie**ce
[ɪ]	p**i**n, b**i**t, l**i**ck
[e]	s**ay**, pl**a**ce, r**ai**n (*in spoken Canadian English*, [e] *becomes* [eɪ])
[ɛ]	t**e**n, s**ai**d, br**ea**d
[æ]	m**a**d, c**a**t, f**a**n
[a]	f**a**r, st**a**rt

Back Vowels

[u]	p**oo**l, bl**ue**
[ʊ]	l**oo**k, g**oo**d, b**u**sh
[o]	thr**ow**, h**o**le, t**oe** (*in spoken Canadian English*, [o] *becomes* [oʊ])
[ʌ]	b**u**s, m**u**d, l**u**nch
[ɔ]	st**o**re, m**o**re, c**o**rn
[ɑ]	d**o**g, b**a**ll, f**a**ther

Central Vowels

[ə]	b**e**lieve, cinn**a**mon, s**u**rround (*in an unstressed syllable*)
[ɨ]	ros**e**s, want**e**d (*in an unstressed syllable that is a suffix*)
[ɚ]	weath**er**, edit**or** (*in an unstressed syllable with an r-quality*)
[ɝ]	b**i**rd, f**ur** (*in a stressed syllable with an r-quality*)

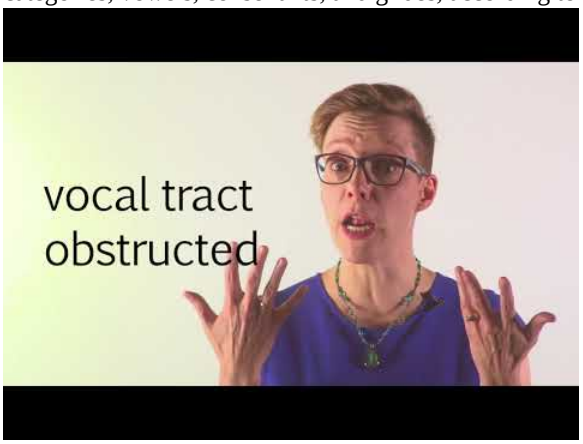
Diphthongs

[aɪ]	fl**y**, l**ie**, sm**i**le
[aʊ]	n**ow**, fr**ow**n, l**ou**d
[ɔɪ]	b**oy**, sp**oi**l, n**oi**se
[ju]	c**ue**, f**ew**

This page titled 2.9: 2.4- IPA symbols and speech sounds is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

2.10: Sonority, Consonants, and Vowels

Sonority has to do with how much acoustic energy a given speech sound has. Linguists divide speech sounds into three broad categories, vowels, consonants, and glides, according to their sonority.



A YouTube element has been excluded from this version of the text. You can view it online here: https://ecampusontario.pressbooks.pu...guistics/?p=46

Check Yourself

1. What kind of sound is the first sound in the word *early*?

- Vowel.
- Glide.
- Voiced consonant.
- Voiceless consonant.

2. What kind of sound is the first sound in the word *junior*?

- Vowel.
- Glide.
- Voiced consonant.
- Voiceless consonant.

3. What kind of sound is the first sound in the word *winter*?

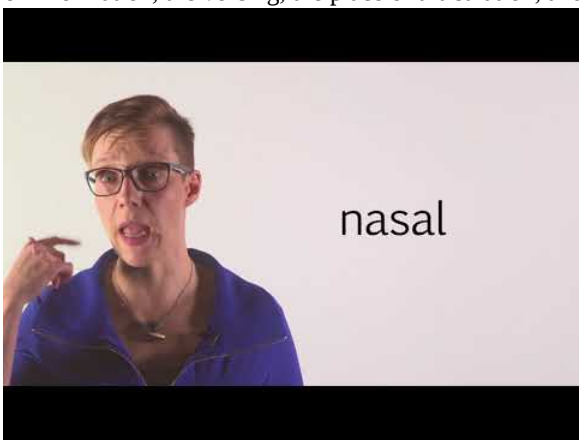
- Vowel.
- Glide.
- Voiced consonant.
- Voiceless consonant.

Answers

This page titled 2.10: Sonority, Consonants, and Vowels is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

2.11: Classifying Consonants

Consonants are classified according to how they are produced. The articulatory description for each consonant includes three pieces of information, the voicing, the place of articulation, and the manner of articulation.



A YouTube element has been excluded from this version of the text. You can view it online here: ecampusontario.pressbooks.pu...guistics/?p=48

Check Yourself

1. What is the articulatory description for the consonant sound represented by the IPA symbol [p]?

- Voiced velar nasal.
- Voiced alveolar approximant.
- Voiceless bilabial stop.

2. What is the articulatory description for the consonant sound represented by the IPA symbol [ð]?

- Voiceless alveolar fricative.
- Voiced dental fricative.
- Voiced alveolar nasal.

3. What is the articulatory description for the consonant sound represented by the IPA symbol [ʃ]?

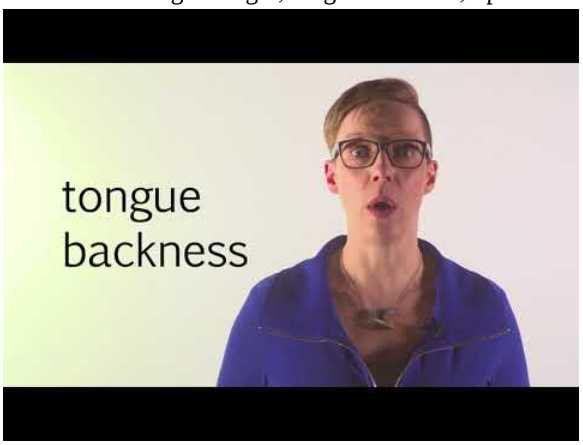
- Voiced velar approximant.
- Voiceless post-alveolar fricative.
- Voiceless labiodental fricative.

Answers

This page titled 2.11: Classifying Consonants is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

2.12: Classifying Vowels

Vowels are made without an obstruction in the vocal tract, so they are quite sonorous. The body of the tongue moves in the mouth to shape each vowel, and for some vowels, the lips are rounded as well. Linguists classify vowels according to four pieces of information: tongue height, tongue backness, lip rounding, and tenseness.



A YouTube element has been excluded from this version of the text. You can view it online here: ecampusontario.pressbooks.pu...guistics/?p=51

Check Yourself

1. What is the articulatory description for the vowel sound represented by the IPA symbol [i]?

- High front unrounded tense vowel.
- Mid central unrounded lax reduced vowel.
- High front unrounded lax vowel.
- High back rounded tense vowel.
- High back unrounded lax vowel.

2. What is the articulatory description for the vowel sound represented by the IPA symbol [ɛ]?

- High back rounded tense vowel.
- Mid front unrounded lax vowel.
- Mid back rounded tense vowel.
- High front unrounded tense vowel.
- Mid central unrounded lax vowel.

3. What is the articulatory description for the vowel sound represented by the IPA symbol [ɑ]?

- High front unrounded tense vowel.
- Mid back unrounded lax vowel.
- Low back unrounded lax vowel.
- Mid back rounded tense vowel.
- Low back unrounded tense vowel.

Answers

This page titled 2.12: Classifying Vowels is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

2.13: Diphthongs

Diphthongs are complex vowel sounds in which the tongue moves from one position to another to make a vowel that changes from one sound to another.



A YouTube element has been excluded from this version of the text. You can view it online here: ecampusontario.pressbooks.pu...guistics/?p=53

This page titled 2.13: Diphthongs is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

2.14: Various Accents of English

Adapted from

www.oercommons.org/courses/ho...nguistics/view

© 2006. Indiana University and Michael Gasser.

Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.2 or any later version published by the Free Software Foundation.

URL: www.indiana.edu/~hlw/PhonProcess/accents.html

Edition 3.0; 2006-12-31

In this section, we look at various English accents and how they differ from one another. Remember that an **accent** is the set of pronunciation conventions of some speech community. Where we draw the boundaries between accents is pretty arbitrary; if we call General American a single accent, for example, we'll have to deal with the range of variation that exists among speakers within that large community. And any boundaries we draw will be wrong in another sense because the group of people who have one pronunciation convention may not coincide neatly with the group of people who have the other set of conventions that belong to the accent we're considering. For example, the group of speakers who pronounce the words *pin* and *pen* the same includes speakers of Southern US accent but also some speakers of General American, which is a very different accent from Southern US English in many other ways. The point is that conventions of pronunciation tend to cluster together; this is what allows us to talk about "accents" at all.

Another point to keep in mind is that in most countries there is a standard, prestige accent alongside a number of accents associated with particular regions, social classes, or ethnic groups. Each of these non-standard accents can be described in its "broad" form, the form that is most different from the standard in the country where it is spoken, but what many people are speaking much of the time is something in between a particular non-standard accent and the relevant standard. In this section, we concentrate mostly on broad variants of non-standard accents because they illustrate the range of possible differences best.

When comparing two dialects or accents, one possibility is to see one of them as deviating from the other. A biased view of non-standard dialects often starts this way: the speakers of these dialects are seen as just making mistakes with the standard when what they say is non-standard. But of course, this is not what is actually happening. Speakers of non-standard dialects learned the conventions of these dialects by hearing other speakers speak them, just as the speakers of standard dialects learned the conventions of their dialects. They are no more speaking the standard wrong than the speakers of the standard dialect are speaking their dialect wrong.

Overview of English Accents

Before looking at examples of differences between accents, it might help to have a sense of what the major accents are and where they're spoken.

The British Isles

There is no "British" accent. England, Scotland, Ireland, and possibly Wales all have their own unofficial standard accents, and the standards of Scotland and Ireland, in particular, are as different from that of England as American accents are. The standard, or prestige, accent of England is usually referred to as Received Pronunciation (RP). This is what the royal family, all recent Prime Ministers, and most BBC announcers speak. It is probably what most Americans think of as an "English" accent, though it is spoken as a native accent by no more than about 10% of the English population. It differs most noticeably from General American in the pronunciation of a few vowels and in the way [ɹ] is treated following vowels. For example, in RP there would be no [ɹ] sounds at all in the phrase *the northern fourth of the park*.

Within England, there are many identifiable regional accents, probably more than in the United States in fact. Among these, London accent (sometimes called "Cockney") stands out because it is familiar to many Americans through film and drama characters such as Eliza Dolittle in *Pygmalion/My Fair Lady* and because it has a number of very characteristic features. Many of the vowels in this accent differ considerably from RP and General American. Other very striking features are the loss of initial [h] ("*'e 'as an 'ard 'eart" = "he has a hard heart*") and the frequent glottal stops in place of other stops in other accents ("*iʔ'll taʔe a loʔ o' time to seʔle" = "it'll take a lot of time to settle"*). Perhaps the other major accent boundary in England separates the accents

of the north from those of the south. Americans may be familiar with the English of Northern England through the speech of the Beatles or the characters in films such *The Full Monty*. These accents can be identified fairly easily because they make no distinction between the vowels [ʌ] and [ʊ]; both are pronounced like [ʊ], so that the words *look* and *luck* are homophones.

Scottish and Irish English share one feature with northern England English; the tense vowels [i], [u], [e] and [o] are not pronounced as diphthongs, as they are in RP and General American. In addition, these accents are like General American, and unlike most accents of England, in how they treat [ɹ] after vowels.

The Western Hemisphere

The unofficial standard accent of the United States is usually called General American (GA) or Mainstream US English (MUSE). This is the accent of much of the Midwest and the West and the most frequent accent for US newscasters, though, interestingly, many of the more recent US Presidents have spoken regional varieties rather than GA. As the prestige accent, it has been encroaching on some regional accents, for example, in the northeast, but at the same time, changes within GA are creating what amount to new accents. One striking example of this is Northern Cities accent, spoken in cities such as Chicago, Detroit, Cleveland, and Rochester, and distinct from GA in the pronunciation of lax vowels. So for example, the word *socks* in the name of the Chicago White Sox is pronounced [saks] in the Northern Cities accent, as compared to [sɑks] in Canadian English.

The Southern US accent is spoken by people mainly in the southeastern part of the country. Like the London accent, this accent has strikingly different vowels from other English accents. African-American Vernacular English (AAVE) is a dialect associated with an ethnic group rather than a region, though of course, you don't have to be African-American to have learned it. The accent associated with this dialect is similar in many ways to Southern US accent, while the phonology, morphology and syntax of this variety have their own characteristic properties.

People from the northeastern US are often easy to identify by their accents; the accent of New York City stands out within this region, again mostly for its vowels. Some other US cities, especially Pittsburgh, are known for particular pronunciation conventions. In Pittsburgh, for example, [a] may be used where GA has [aʊ], so *downtown* may be [dantan].

Standard Canadian English (except in the province of Newfoundland) is very similar to General American, and it doesn't vary much from place to place. One characteristic of Canadian English is the pronunciation of [aɪ] and [aʊ] in certain contexts, which we'll learn about in Section 4.6.

English is the native language of much of the Caribbean, with some features common to the region and others specific to particular islands. As with other accents, there are characteristic vowels in these accents, and in addition, a tendency in the Caribbean, as there is in some US accents, to make no distinction between [t] and [θ] or between [d] and [ð]. Jamaican English in particular also has quite striking intonation patterns.

The Southern Hemisphere

English is the native language of most Australians and New Zealanders and a sizable minority of South Africans. While the standard English accents of these countries tend to approach RP, the broad accents of most English speakers in all three countries have tense vowels similar to those in the London accent. The lax front vowels of Australian and New Zealand English differ from those in other accents.

Non-native accents

English is spoken as a second language by millions of people, especially in regions that were once colonized by Britain in South Asia and Africa. In some of these regions, there are particular English pronunciation conventions that derive from the phonology of the local languages. For example, in the English of South Asians (Indians, Pakistanis, Bangladeshis, Sri Lankans, Nepalese, Bhutanese, and Maldivians), the alveolar consonants [t], [d], [n], and [l] tend to be replaced by retroflex consonants, which are common in the languages of this region. These non-native conventions are one of the ways that English is becoming even more of an international language.

This page titled 2.14: Various Accents of English is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

CHAPTER OVERVIEW

3: Speech Sounds in the Mind

3.1: Broad and Narrow Transcription
3.2: IPA for Canadian English
3.3: Syllabic Consonants
3.4: Aspirated Stops in English
3.5: Articulatory Processes- Assimilation
3.6: Other Articulatory Processes
3.7: Practice Time
3.8: Summary
3.9: Suprasegmentals
3.10: Transcribing Casual Speech

This page titled 3: Speech Sounds in the Mind is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

3.1: Broad and Narrow Transcription

Learning to use the IPA to transcribe speech can be very challenging, for many reasons. One reason we've already talked about is the challenge of ignoring what we know about how a word is spelled to pay attention to how the word is spoken. Another challenge is simply remembering which symbols correspond to which sounds. The tables in Units 2.4 and 3.2 may seem quite daunting, but the more you practice, the better you'll get at remembering the IPA symbols.

A challenge that many beginner linguists face is deciding exactly how much detail to include in their IPA transcriptions. For example, if you know that Canadian English speakers tend to diphthongize the mid-tense vowels [e] and [o] in words like *say* and *show*, should you transcribe them as the diphthongs [eɪ] and [oʊ]? And the segment [p] in the word *apple* doesn't sound quite like the [p] in *pear*; how should one indicate that? Does the word *manager* really begin with the same syllable that the word *human* ends with?

Part of learning to transcribe involves making a decision about exactly how much detail to include in your transcription. If your transcription includes enough information to identify the place and manner of articulation of consonants, the voicing of stops and fricatives, and the tongue and lip position for vowels, this is usually enough information for someone reading your transcription to be able to recognize the words you've transcribed. A transcription at this level is called a **broad transcription**.

But it's possible to include a great deal more detail in your transcription, to more accurately represent the particulars of accent and dialect and the variations in certain segments. A transcription that includes a lot of phonetic detail is called a **narrow transcription**. The rest of this chapter discusses the most salient details that would be included in a narrow transcription of the most widespread variety of Canadian English.

This page titled 3.1: Broad and Narrow Transcription is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

3.2: IPA for Canadian English

Full International Phonetic Alphabet

You can see the official version of the full IPA chart on the website of the International Phonetic Association here.

In Essentials of Linguistics, we concentrate on the IPA symbols for transcribing the speech sounds of Canadian English.

Canadian English Consonants

Figure 1 shows the IPA symbols for the consonants in Canadian English:

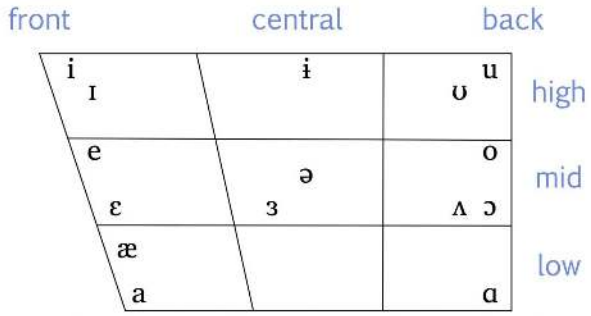
	bilabial	labio-dental	dental	alveolar	post-alveolar	palatal	velar	glottal
stop	p b			t d			k g	ʔ
nasal	m			n			ŋ	
flap				ɾ				
fricative		f v	θ ð	s z	ʃ ʒ			h
approximant				ɹ		j		
lateral approximant				l				

Remember that this table lists the manner of articulation from top to bottom in order of how obstructed the vocal tract is: the greatest obstruction is for stop consonants, and the least obstruction is for approximants. And from left to right, the table depicts a place of articulation, starting at the front of the mouth with the bilabial sounds and moving all the way back to the glottis. When there are two symbols given in one cell, the one on the left is voiceless and the one on the right is voiced.

There are three speech sounds that are part of Canadian English that don't fit neatly into this table. Remember that affricates have a two-part manner of articulation: they begin with a complete obstruction of the vocal tract, but that obstruction is released only partially. You can think of an affricate like a stop combined with a fricative, and the symbols that we use to transcribe them reflect that. Because they have a two-part manner of articulation, the affricates [tʃ] and [dʒ] don't fit into the consonant chart. The other sound that doesn't fit on the chart is the approximant [w]. It has two places of articulation: the lips are rounded, and the body of the tongue moves towards the velum. So the IPA's name for the segment [w] is a **labial-velar approximant**.

Canadian English Vowels

Figure 2 shows the IPA symbols for the vowels of Canadian English:



Remember that the vowel trapezoid is meant to correspond to the position of the tongue in the mouth.

This page titled 3.2: IPA for Canadian English is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

3.3: Syllabic Consonants

We defined a syllable as a peak of sonority surrounded by less sonorous sounds. In most cases, the peak of sonority, that is, the nucleus of a syllable, is a vowel because vowels are the most sonorous sounds. But in some conditions, a sonorous consonant, a nasal or a liquid, can be the nucleus of a syllable. In those cases, the consonant is transcribed with a special diacritic to indicate its syllabic status.



A YouTube element has been excluded from this version of the text. You can view it online here: https://ecampusontario.pressbooks.pu...guistics/?p=67

Check Yourself

1. The video indicated that the word *funnel* can be transcribed to indicate that the second syllable consists of a syllabic [l̩]. The word *elbow* is also spelled with the letters ‘el’. Say the two words to yourself several times. Which is the correct transcription for *elbow*?

- [l̩boʊ].
- [ɛlboʊ].

2. The words *human* and *manager* both contain a syllable that is spelled with the letters ‘man’. In which word does that syllable contain a syllabic [n̩]?

- Human.
- Manager.

3. In the word *umbrella*, is the [m] syllabic?

- Yes.
- No.

Answers

This page titled 3.3: Syllabic Consonants is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

3.4: Aspirated Stops in English

Not all stops are pronounced the same way. Native speakers of English produce the voiceless stops [p, t, k] as aspirated in some environments, but unaspirated in other environments. This unit deals with the systematic, predictable environments in English where aspiration occurs on voiceless stops.



A YouTube element has been excluded from this version of the text. You can view it online here: https://ecampusontario.pressbooks.pu...guistics/?p=69

Check Yourself

1. The following city names all contain the letter 't' within the word. In which of them is the letter 't' pronounced as [t^h]?

- Victoria.
- Ottawa.
- Edmonton.

2. The following words all contain the segment /k/. In which of them is it pronounced as the allophone [k^h]?

- Actually.
- Accomplish.
- Attic.

3. The following words all contain the segment /p/. In which of them is it pronounced as the allophone [p^h]?

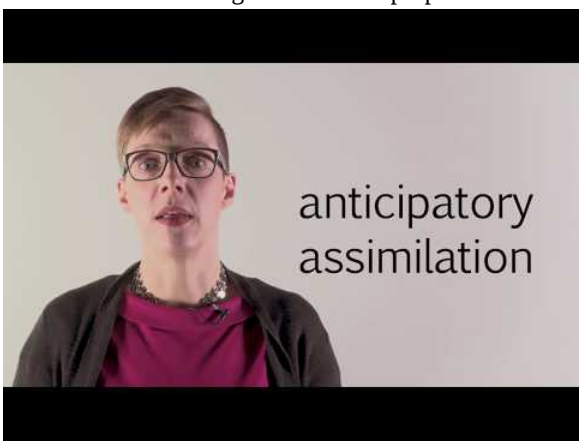
- Appearance.
- Zipper.
- Application.

Answers

This page titled 3.4: Aspirated Stops in English is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

3.5: Articulatory Processes- Assimilation

When we speak, we don't articulate individual segments separate from each other. Our articulators are always moving from the sound they just made to the sound that's coming up. This means that each speech segment is influenced by the sounds that are near it. When a sound changes some of its properties to be more similar to the nearby sounds, this is known as **assimilation**.



A YouTube element has been excluded from this version of the text. You can view it online here: https://ecampusontario.pressbooks.pub/essentialsoflinguistics/?p=71

Check Yourself

1. What articulatory process is at work when the word *bank* is pronounced as [bæŋk]?

- Assimilation (Anticipatory / Regressive).
- Assimilation (Perseveratory / Progressive).

2. What articulatory process is at work when a child pronounces the word *yellow* as [lɛloʊ]?

- Assimilation (Anticipatory / Regressive).
- Assimilation (Perseveratory / Progressive).

3. What articulatory process is at work when the word *cream* is pronounced as [k^hɻ̥ijm]?

- Assimilation (Anticipatory / Regressive).
- Assimilation (Perseveratory / Progressive).

Answers

This page titled 3.5: Articulatory Processes- Assimilation is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

3.6: Other Articulatory Processes

In regular, everyday speech, some predictable articulatory processes occur. In predictable contexts, vowels are reduced or deleted. In other contexts, sounds might be inserted or might switch position. Learning to do narrow transcription involves knowing where these predictable articulatory processes occur.



A YouTube element has been excluded from this version of the text. You can view it online here: https://ecampusontario.pressbooks.pub/essentialsoflinguistics/?p=73

Check Yourself

1. What articulatory process is at work when the word *idea* is pronounced as [aɪdijɚ]?

- Reduction.
- Deletion.
- Metathesis.
- Epenthesis.

2. What articulatory process is at work when the word *gorilla* is pronounced as [ɡɹɪlʌ]?

- Reduction.
- Deletion.
- Metathesis.
- Epenthesis.

3. What articulatory process is at work when the word *you* is pronounced as [jə]?

- Reduction.
- Deletion.
- Metathesis.
- Epenthesis.

Answers

This page titled 3.6: Other Articulatory Processes is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

3.7: Practice Time

Exercises 3 and 4 are adapted from *How Language Works* available here.

© 2006. Indiana University and Michael Gasser.

Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.2 or any later version published by the Free Software Foundation.)

Exercise 1. In some varieties of English, mostly spoken in the Midwestern U.S.A., the vowel in the first, unstressed syllable of the word is deleted in words like *police, believe, parade, pollution, terrific, collision*, but is not deleted in words like *detective, dependent, majestic, pedantic*. Answer the following questions about the natural class of sounds that follow the deleted vowel.

1. Describe the natural class in words.
2. Use a feature matrix to represent the natural class.

Exercise 2. Here is a set of data transcribed from German. Examine the data and pay attention to these three segments:

[ç] (voiceless palatal fricative)

[ʃ] (voiceless post-alveolar fricative)

[x] (a voiceless velar fricative)

You may also wish to know the following:

[ø] is a mid-high, front, rounded tense vowel

[y] is a high, front, rounded tense vowel

[ɪç]	I	[byʃə]	bushes	[bux]	book
[manç]	some	[tuʃə]	ink	[dɑx]	roof
[durç]	through	[nɑʃən]	nibble	[nɑxən]	small boat
[tøçtər]	daughters	[kɪrʃə]	cherry	[nɔx]	still, yet
[meːdçən]	girl	[fɪʃtə]	fished	[tux]	scarf
[kɪrçə]	church	[mɛnʃən]	people	[kuxən]	cake
[fɪçtə]	pine	[ʃpiːlən]	to play	[ɑxɑːt]	agate
[mɛnçən]	little man	[ʃtɑːt]	state	[lɑxst]	(you) laugh

- Describe clearly in words the observations you've made about the three segments [ç] [ʃ] [x]. Also, include examples from the data to support your observations.
- Based on your observations, what conclusions can you make about how the segments [ç] [ʃ] [x] are represented in the grammar of German?

Exercise 3. The Japanese phoneme /s/ has two allophones: [s] and [ʃ]. Examine the following dataset, and then describe in words what environments each allophone appears in.

[saja] pod	[heso] navel	[ʃite] doing
[kasa] umbrella	[suʃi] sushi	[kuʃi] skewer
[senkjo] election	[hanasu] speak	[saʃimi] sashimi
[mise] store	[ʃiku] spread	[meʃi] rice
[sono] that	[ʃima] island	[sasemaʃita] caused

Exercise 4. In Modern English, as you know, the fricatives [f, v, θ, ð, s, z] are six different phonemes. But in Old English, these six segments were categorized as only three different phonemes, each with a voiced and a voiceless allophone, [f, v], [θ, ð], [s, z]. The following words from Old English show the distribution of these segments.

[fæder]	father	[iːzern]	iron
[ɬɑːf]	bread	[wrɑθ]	angry
[fæðm]	fathom	[kweðɑn]	to say
[stɑvɑs]	letters	[eorðe]	earth
[smiθ]	blacksmith	[yvele]	evil
[ræːzɑn]	to attack	[heovon]	sky
[θɑːx]	thrived	[furðor]	further
[æːvre]	always	[ræːzde]	attacked

This page titled 3.7: Practice Time is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

3.8: Summary

You've now seen that the mental grammar of every language organizes speech sounds differently. A pair of sounds that contrast with each other in one language might be allophones of the same phoneme in another language. Even without knowing another language, you can now use the tools that linguists use to analyze phonological data from a language: you can look for minimal pairs to find evidence of phonemic contrast, or you can analyze environments and identify complementary distribution to find evidence of allophonic variation.

Many processes of allophonic variation in the world's languages apply not just to pairs of segments, but to natural classes of sounds. The notation of feature matrices helps to identify the natural classes that undergo allophonic variation, and the natural classes of environments that lead to (or "condition") this variation.

This page titled 3.8: Summary is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

3.9: Suprasegmentals

In addition to segmental information about speech sounds, many languages make use of prosody or suprasegmental information. Suprasegmental information includes the pitch, loudness, and length of sounds, and these factors contribute to the rhythm and stress patterns of spoken language.

[redacted]

Pitch: **Tone**

Mandarin	
[mā]	*"mother"*
[má]	*"linen"*
[mǎ]	*"horse"*
[mà]	*"scold"*
[ma]	*end of a question*

[redacted]

A YouTube element has been excluded from this version of the text. You can view it online here: https://ecampusontario.pressbooks.pub/essentialsoflinguistics/?p=75

Check Yourself

1. Young children's voices are usually recognizably different from adult's voices. Which factor is likeliest to be different between children's speech and adults' speech?

- Word length.
- Tone.
- Pitch.

2. In English, *yes-no* questions often conclude with rising pitch, whereas *wh*-questions often have a falling pitch on the final words. Is this pitch difference a difference in tone or in intonation?

- Tone.
- Intonation.
- Pitch.

3. English uses pitch as one factor in syllable stress. There are many English pairs of words like *record* (noun) and *record* (verb), which are spelled the same but differ in their stress patterns. Which of the following is true for this pair of words?

- The first syllable has higher pitch than the second in the noun *record*.
- The second syllable has higher pitch than the first in the noun *record*.

Answers

This page titled 3.9: Suprasegmentals is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

3.10: Transcribing Casual Speech

Adapted from:

http://www.oercommons.org/courses/how-language-works-the-cognitive-science-of-linguistics/view

© 2006. Indiana University and Michael Gasser.

Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.2 or any later version published by the Free Software Foundation.

URL: www.indiana.edu/~hlw/PhonProcess/wild.html

Edition 3.0; 2011-08-30

If you've listened carefully to your own pronunciation of English words since you started learning about speech sounds, you might have noticed that the pronunciation that's transcribed doesn't always correspond to the way you sometimes say the words and that your pronunciation varies with the situation.

In Unit 2.3, we already saw that the conventions characterizing a particular dialect can change depending on the context the language is used in. What's appropriate in one context may not be in another. This applies to pronunciation, as well as to vocabulary and grammar.

The dimension we will be concerned with here is sometimes referred to in terms of how "careful" the speech is. The "care" referred is care on the part of the Speaker. To what extent does the Speaker make an effort to accurately produce each of the segments and suprasegmental features of the words? To make sense of this idea, we will have to assume that each word in a dialect has a "careful" pronunciation, that is, how the word would sound if produced in isolation or with some emphasis within a sentence and in a relatively formal setting. In general, as the word gets less emphasis and the setting gets more casual, we find a tendency for Speakers to deviate from the careful pronunciation. These deviations are Speaker-oriented; that is, they can all be seen as making the pronunciation easier in one way or another; they are simplifications. Simplification is possible because in the casual situations where it is most common, the Hearer knows the Speaker well and is better able to predict what the Speaker is saying than a stranger would be. In this unit, we will look at some examples of the simplifications that occur in casual English. We will see that they can often be described in terms of the articulatory processes that we talked about in Units 3.5 and 3.6.

Syllable Stress and Vowels

Before we look at the simplifications that happen in English as speech becomes more casual, we need to look at some basic features of English phonology.

First, in English, as in many languages in which stress plays a major role, there are significant differences between stressed and unstressed syllables. Stressed syllables permit all of the possible vowel segments, whereas the vowels in unstressed syllables are most commonly produced as [ə], [i̬], or [ɪ]. We can observe these differences most clearly when we look at how the pronunciation of a syllable changes when it becomes stressed or unstressed. Consider the second syllables in the following related pairs of words:

melody, melodic
repeat, repetition

In *melodic* the second syllable is stressed, and the vowel is pronounced [ɑ]. In *melody* it is unstressed, and the vowel is pronounced [ə]. In the second pair, the second syllable of *repeat* is stressed and the vowel is [i], but when the second syllable is unstressed, as in *repetition*, the vowel is [ə].

Syllable Stress and Alveolar Stops

When a word contains a [t] or [d] in the onset of an unstressed syllable, very often the tongue makes only brief contact with the alveolar ridge, so that instead of a plosive, only a very brief flap [ɾ] is produced. In the following pairs of words, compare the second consonant.

metal, metallic
medal, medallion

In both *metal* and *medal*, the first syllable is stressed and the second is unstressed. Both words are pronounced as [mɛɾl̩]. But in *metallic* and *medallion*, the second syllable is stressed. In the onset of a stressed syllable, the segments are pronounced as [t^h] and [d], respectively.

Simplifications within Words

When a verb that ends in a vowel takes an affix that begins with a vowel, like in *trying*, or *showing*, the vowel in the second syllable might disappear in casual speech. Likewise, if the past-tense affix *-ed* or the plural *-s* is added to a word that ends in a cluster of consonants, then some of those consonants might disappear. Some examples are given below:

	careful speech	casual speech
trying	[ʈʌajɪŋ]	[ʈʌaɪŋ] or [ʈʌaɪn]
showing	[ʃowɪŋ]	[ʃoʊŋ] or [ʃoʊn]
asked	[æskt]	[æst]
thanked	[θæŋkt]	[θæŋt]
fifths	[fɪfθs]	[fɪθs]

If a word contains the same consonant twice, with only an unstressed vowel in between, the vowel and second consonant are often deleted, as in these examples:

	careful speech	casual speech
probably	[pɹɑbəbli]	[pɹɑbli]
necessary	[nɛsəsɛri]	[nɛsɛri]
mirror	[miɻəɻ]	[miɻ]

Simplifications across Word Boundaries

Other possible simplifications may occur across the boundaries between words. Consider what happens when an alveolar consonant ends up before a [j], as in two places in the following sentence.

> *Wri**te** **y**our name on thi**s** **y**ellow sheet.*

Speaking carefully, most people would pronounce the two parts shown in bold as [tj] and[sj]. But when we speed up and allow ourselves to simplify, these may become [tʃ] and [ʃ]. This is an example of assimilation (for more examples, see Unit 3.5). The alveolar and palatal consonants combine to yield single consonants that are at the postalveolar place of articulation, in between the original places.

Simplifications of Frequent Phrases

If a set of words occur together very frequently, then they can be easily predicted by the hearer, so they are good candidates for simplification by the speaker.

careful speech	casual speech
would have	[wʊdə]
going to	[gʊnə]
got to	[gɑɾə]
want to	[wɑnə]
have to	[hæftə]
supposed to	[spostə]
I'm going to	[æŋgʊnə] or [æmʊnə]
What did you think?	[wʌdʒə θɪŋk]
How have you been?	[hawvjə bɪn]
I don't know	[ædəno]

Let's summarize what we found for simplified speech in English. First, how likely a word or sequence of words is to be simplified depends on at least on these factors.

- how frequent the form is,
- how little information the form carries,
- how casual the situation is.

Second, the simplifications that occur involve assimilation; the reduction of vowels, often to [ə]; the merging of sequences of the same consonant; the deletion of [ə] and of some initial or final consonants. Many of these processes are general processes in the language. In some cases, however, the simplifications are conventions associated with particular words and must be learned separately.

This page titled 3.10: Transcribing Casual Speech is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

CHAPTER OVERVIEW

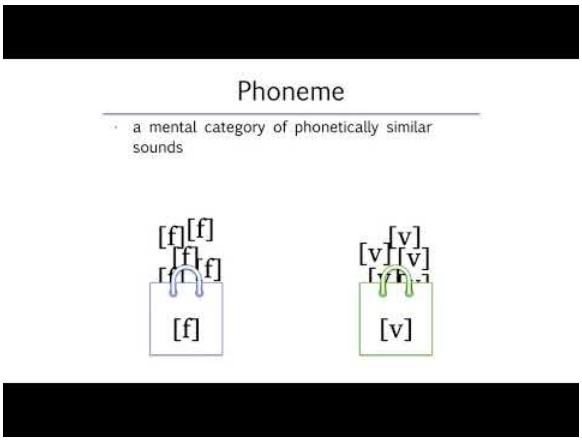
4: Psycholinguistics of Learning Sounds

4.1: Phonemes and Contrast
4.2: Allophones and Predictable Variation
4.3: Phonetic Segments and Features
4.4: Practice Time
4.5: Natural Classes
4.6: Summary
4.7: Phonological Derivations

This page titled 4: Psycholinguistics of Learning Sounds is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

4.1: Phonemes and Contrast

Within a given language, some sounds might have slight phonetic differences from each other but still be treated as the same sound by the mental grammar of that language. A phoneme is a mental category of sounds that includes some variation within the category. The mental grammar ignores that variation and treats all members of a phoneme category as the same sound.



A YouTube element has been excluded from this version of the text. You can view it online here: ecampusontario.pressbooks.pu...guistics/?p=84

Check Yourself

1. Are the phonetically different segments [m] and [n] phonemically contrastive in English?

- Yes.
- No.

2. Are the phonetically different segments [p] and [p^h] phonemically contrastive in English?

- Yes.
- No.

3. Do the words *sight* and *site* form a minimal pair in English?

- Yes.
- No.

Answers

Video Script

In the last couple of chapters, we've seen lots of ways that sounds can differ from each other: they can vary in voicing, in place and manner of articulation, in pitch or length. Within the mental grammar of each language, some of these variations and meaningful and some are not. Each language organizes these meaningful variations in different ways. Let's look at some examples.

In the English word *please*, I could pronounce it with an ordinary voiced [l]: [p^hliz] it would be a little unnatural but it's possible. Or, because of perseveratory assimilation, I could devoice that [l] and pronounce it [p^hl̥iz]. We've got two slightly different sounds here: both are alveolar lateral approximants, but one is voiced and one is voiceless. But if I pronounce the word [p^hliz] or [p^hl̥iz], it means the same thing. The voicing difference in this environment is not meaningful in English and most people never notice if the [l] is voiced or not.

In the words *van* and *fan*, each word begins with a labio-dental fricative. In *van*, the fricative is voiced and in *fan* it's voiceless. In this case, the difference in voicing is meaningful: it leads to an entirely different word, and all fluent speakers notice this difference! Within the mental grammar of English speakers, the difference between voiced and voiceless sounds is meaningful in some environments but not in others.

Here's another example. I could pronounce the word *free* with the ordinary high front tense vowel [i]. Or I could make the vowel extra long, *freeeee*. (Notice that we indicate a long sound with this diacritic [iː] that looks a bit like a colon.) But this difference is not meaningful: In English, both [fri] and [friː] are the same word. In Italian, a length difference is meaningful. The word *fato* means "fate". But if I take that alveolar stop and make it long, the word *fatto* means a "fact". The difference in the length of the stop makes [fatɔ] and [fatːɔ] two different words. (N.B., In the video there's an error in how these two words are transcribed; it should be with the [a] vowel, not the [æ] vowel.)

So here's the pattern that we're observing. Sounds can vary; they can be different from each other. Some variation is meaningful within the grammar of a given language, and some variation is not.

Until now, we've been concentrating on phonetics: how sounds are made and what they sound like. We're now starting to think about **phonology**, which looks at how sounds are organized within the mental grammar of each language: which phonetic differences are meaningful, which are predictable, which ones are possible and which ones are impossible within each language. The core principle in phonology is the idea of **contrast**. Say we have two sounds that are different from each other. If the difference between those two sounds leads to a difference in meaning in a given language, then we say that those two sounds contrast in that language.

So for example, the difference between *fan* and *van* is a phonetic difference in voicing. That phonetic difference leads to a substantial difference in meaning in English, so we say that /f/ and /v/ are **contrastive** in English. And if two sounds are contrastive in a given language, then those two sounds are considered two different phonemes in that language.

So here's a new term in linguistics. What is a **phoneme**? A phoneme is something that exists in your mind. It's a mental category, into which your mind groups sounds that are phonetically similar and gives them all the same label. That mental category contains memories of every time you've heard a given sound and labelled it as a member of that category. You could think of a phoneme like a shopping bag in your mind. Every time you hear the segment [f], your mental grammar categorizes it by putting it in bag labelled /f/. /v/ contrasts with /f/ — it's a different phoneme, so every time you hear that [v], your mind puts it in a different bag, one labelled /v/.

If we look inside that shopping bag, inside the mental category, we might find some phonetic **variation**. But if the variation is not meaningful, not contrastive, our mental grammar does not treat those different segments as different phonemes. In English, we have a phonemic category for /l/, so whenever we hear the segment [l] we store it in our memory as that phoneme. But voiceless [l̥] is not contrastive: it doesn't change the meaning of a word, so when we hear voiceless [l̥] we also put it in the same category in our mind. And when we hear a syllabic [l̩], that's not contrastive either, so we put that in the same category. All of those [l]s are a little different from each other, phonetically, but those phonetic differences are not contrastive because they don't lead to a change in meaning, so all of those [l]s are members of a single phoneme category in English.

Now, as a linguist, I can tell you that voiceless [f] and voiced [v] are two different phonemes in English, while voiceless [l̥] and voiced [l] are both different members of the same phoneme category in English. But as part of your developing skills in linguistics, you want to be able to figure these things out for yourself. Our question now is, how can we tell if two phonetically different sounds are phonemically contrastive? What evidence would we need? Remember that mental grammar is in the mind — we can't observe it directly. So what evidence would we want to observe in the language that will allow us to draw conclusions about the mental grammar?

If we observe that a difference between two sounds — a phonetic difference — also leads to a difference in meaning, then we can conclude that the phonetic difference is also a phonemic difference in that language. So our question really is, how do we find differences in meaning?

What we do is look for a **minimal pair**. We want to find two words that are identical in every way except for the two segments that we're considering. So the two words are minimally different: the only phonetic difference between them is the difference that we're interested in. If we can find such a pair, where the minimal phonetic difference leads to a difference in meaning, it's contrastive, then we can conclude that the phonetic difference between them is a phonemic difference.

We've already seen one example of a minimal pair: *fan* and *van* are identical in every way except for the first segment. The phonetic difference between [f] and [v] is contrastive; it changes the meaning of the word, so we conclude that /f/ and /v/ are two

different phonemes. Can you think of other minimal pairs that give evidence for the phonemic contrast between /f/ and /v/? Take a minute, pause the video, and try to think of some.

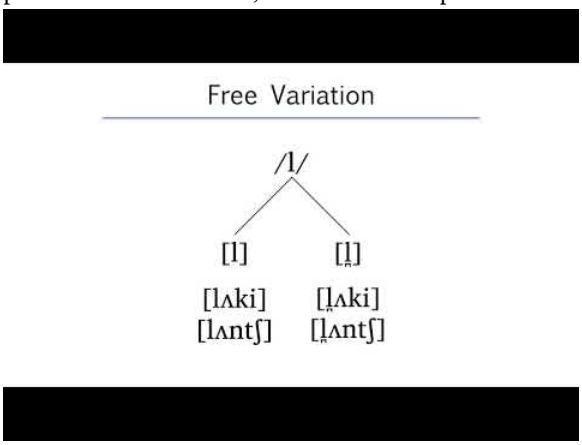
Here are some more minimal pairs that I thought of for /f/ and /v/: *vine* and *fine*, *veal* and *feel*. Minimal pairs don't have to have the segments that we're considering at the beginning of the word. Here are some pairs that contrast at the end of the word: *have* and *half*, *serve* and *surf*. Or the contrast can occur in the middle of the word, like in *reviews* and *refuse*. What's important is that the two words are minimally different: they are the same in all their segments except for the two that we're considering. And it's also important to notice that the minimal difference is in the IPA transcription of the word, not in its spelling.

So we've got plenty of evidence from all these minimal pairs in English that the phonetic difference between /f/ and /v/ leads to a meaning difference in English, so we can conclude that, in English, /f/ and /v/ are two different phonemes.

This page titled 4.1: Phonemes and Contrast is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

4.2: Allophones and Predictable Variation

Within a phoneme category, speech sounds vary, usually in predictable ways. The variants within a phoneme category are called allophones. Allophones usually appear in complementary distribution, that is, a given allophone of one phoneme appears in one predictable environment, but the other allophones of that phoneme never appear in that environment.



A YouTube element has been excluded from this version of the text. You can view it online here: https://ecampusontario.pressbooks.pu...guistics/?p=86

Check Yourself

1. Remember that in English, voiceless stops are aspirated at the beginning of a word and the beginning of a stressed syllable, but never in the middle of a word nor at the end of a word. Which term best describes this pattern?

- Phonemic contrast.
- Minimal pair.
- Complementary distribution.

2. The symbol [ɬ] represents a velarized [l]. Looking at the following set of transcribed English words, what can you conclude about [l] and [ɬ] in English?

leaf [lif] fall [fɑɬ]

luck [lʌk] spill [spɪɬ]

lemon [lɛmən] wolf [wʊɬf]

- [l] and [ɬ] are phonemically contrastive in English.
- [l] and [ɬ] are in complementary distribution in English.

3. Remembering that the alveolar flap [ɾ] appears in a predictable environment in English (see Section 3.9), which statement is true for English?

- The segments [t] and [ɾ] are two different phonemes in English.
- The segments [t] and [ɾ] are allophones of the same phoneme in English.

Answers

Video Script

In our last unit, we learned about the notion of a **phoneme**. Remember that a phoneme is something that exists in your mind: it's like a shopping bag in which your mind stores memories of examples of phonetically similar sounds that are all members of one category. Not all the sounds that you store in one phoneme category have to be identical; in fact, your mental category has room for a lot of **variation**. Any variants that are not contrastive, that don't lead to a meaning change, are members of that same phoneme category and are called **allophones**.

We've already seen some examples of allophones of English phonemes as we've been learning to transcribe sounds. We know that the alveolar lateral approximant [l] has a voiceless variant [l̥] and a syllabic variant [l̩], but our minds categorize all of them as members of the same phoneme. This shopping-bag metaphor is going to get a little unwieldy, so let's look at another notation that we can use to represent this phoneme category.

We say that /l/ is the label for the phoneme category itself, it's the most general form of the phoneme. Notice that instead of using square brackets, for the symbol that represents the whole category we use slashes. In any given word, the phoneme /l/ might get spoken as any one of its allophones, each of which gets represented in square brackets. But where does each allophone appear? Which allophones do we use in which words? One of the big things that phonology is concerned with is the **distribution** of allophones: that is, what phonetic environments each allophone appears in. The distribution of allophones is a key part of the mental grammar of each language — it's something that all speakers know unconsciously.

Some allophones appear in **freevariation**, which means that it's pretty much random which variant appears in any environment. But most allophones are entirely **predictable**: linguists say that allophonic variation is **phonetically conditioned** because it depends on what other sounds are nearby within the word.

Let's start by looking at free variation because it's the simpler case. Take our phoneme /l/, as in the words *lucky* and *lunch*. Most of the time you pronounce these words with a plain old ordinary voiced alveolar lateral approximant. But sometimes you might be speaking extra clearly — maybe you're trying to talk to a relative who's hard of hearing, or maybe you're concentrating on teaching some speech sounds to a language learner. So instead of making the /l/ sound at the alveolar ridge, you stick your tongue right out between your teeth and say *lucky* or *lunch*. Now you're making a dental [l̪], not an alveolar [l], but it's still a member of the phoneme category for /l/ — it doesn't change the meaning of the word so this phonetic difference is not contrastive. It's just free variation within the category.

But most allophonic variation is predictable: different allophones show up in different **environments**. Let's look at a few words. If we look at this set of words: *plow*, *clap*, *clear*, *play*, we can see that whenever /l/ follows a [p] or [k], it is **devoiced**. But now look at this other set of words *(blue*, *gleam*, *leaf*, *fall*, *silly*), when /l/ appears in any other environment, like following a voiced stop, or at the beginning of a word, at the end of a word, or in the middle of a word, it's the ordinary [l]. If we looked at a whole lot more words and recorded a lot of English speakers, we'd find that whenever /l/ is in a consonant cluster following a voiceless aspirated stop, it also becomes voiceless, but when /l/ is in other environments, it stays voiced. We never find voiceless [l̥] in other environments, and we almost never find voiced [l] following a voiceless stop. That pattern is called **complementary distribution**.

That's an important phrase, and it's going to come up a lot in the next few units. It means that there's no overlap in where we find the allophones: We see voiceless [l̥] following voiceless stops, but never anywhere else, and we never see voiced [l] in that environment. Likewise, we see voiced [l] in lots of different environments, but we never see voiceless [l̥] in any of those places. When we see complementary distribution, that's good evidence that the two segments we're considering are allophones of one phoneme. Can you think of any other examples of English phonetic segments that are in complementary distribution? Think about what happens when you're transcribing voiceless stops.

So let's sum up. If we have two phonetic segments that are related but different from each other, and we find some **minimal pairs** to show that this phonetic difference is **contrastive**, then we conclude that those two segments are **twodifferent phonemes**.

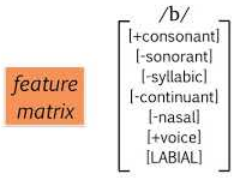
And if we have two phonetic segments that are related but different, and they're not contrastive, then we look to see what the **distribution** of these segments is, that is, what **environments** we see them in. If they're not contrastive and they're in **complementary distribution**, then we conclude that they're **allophones of the same phoneme**.

This page titled 4.2: Allophones and Predictable Variation is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

4.3: Phonetic Segments and Features

Each speech sound can be analyzed in terms of its phonetic features, the parts of the sound that can each be independently controlled by the articulators. We can represent the features of each sound using a feature matrix, or we can use a feature matrix to represent a class of sounds that have features in common.

[redacted]



[redacted]

A YouTube element has been excluded from this version of the text. You can view it online here: ecampusontario.pressbooks.pu...guistics/?p=88

Check Yourself

1. Which feature distinguishes the segments [w] and [o]?

- [syllabic].
- [consonant].
- [LABIAL].

2. Which feature distinguishes the segments [p] and [f]?

- [LABIAL].
- [sonorant].
- [continuant].

3. Which feature distinguishes the segments [p] and [b]?

- [voice].
- [LABIAL].
- [continuant].

Answers

Video Script

In our thinking about speech sounds so far, we've focused almost entirely on **segments**. Segments are the individual speech sounds, each of which gets transcribed with an individual symbol in the IPA. We've seen that any given segment can influence the segments that come before and after it, through coarticulation and other articulatory processes. And we've also seen that segments can be grouped together into **syllables**, which we look at in more detail in another unit. Within the grammar of any language, two different segments might contrast with each other or might not.

So we've been talking as if segments are the smallest unit in speech, but in fact, each speech segment is made up of smaller components called **features**. Each feature is an element of a sound that we can control independently. To see how features work, let's look at a couple of examples. We can describe the segment [b], for example, as being made up of this set of features. First, [b] is a consonant (meaning it has some obstruction in the vocal tract), so it gets the feature *consonant* indicated with a plus sign to show that the consonant feature is present. Looking at the next feature, sonorant, notice that it's indicated with a minus sign, meaning that [b] is not a sonorant. The feature *sonorant*, of course, has to do with sonority. We know that stops have very low

sonority because the vocal tract is completely closed for stops, so stops are all coded as [-sonorant]. The next feature, *syllabic*, tells us whether a given segment is the nucleus of a syllable or not. Remember that the most common segments that serve as the nucleus of a syllable are vowels, but stops certainly cannot be the nucleus, so /b/ gets labelled as [-syllabic]. These first three features, consonant, sonorant, and syllabic allow us to group all speech segments into the major classes of consonants, vowels, and glides. We'll see how in a couple of minutes.

This next set of features has to do with the manner of articulation. The feature *continuant* tells us how long a sound goes on. Stops are very short sounds; they last for only a brief moment, so [b] gets a minus sign for *continuant*. We also know that [b] is not made by passing air through the nasal cavity, so it also gets a minus sign for the feature *nasal*. And [b] is a voiced sound, made with vocal folds vibrating, so it is [+voice].

The last feature we list for [b] is [LABIAL] because it's made with the lips. (Stay tuned for an explanation of why some features are listed in lower-case and some in upper-case.)

This whole list of features is called a **feature matrix**; it's the list of the individual features that describe the segment [b], in quite a lot of detail! Because features are at the phonetic level of representation, we use square brackets when we list them. You often see a feature matrix listed with a large pair of square brackets, like this, but we'll just use individual square brackets on each feature.

Now I want you to notice something. If we take this whole feature matrix and change the value of just one feature, changing the feature *voice* from plus to minus, now we're describing a different segment, [p]: [p] has every feature in common with [b] except for voicing. Likewise, if we take the feature matrix for [b] and change the value of the feature *continuant* from minus to plus, now we're describing the segment [v], which has all the same features as [b] except that it can continue for a long time because it's a fricative. Or if we take the feature matrix for [b] and change the feature *nasal* from minus to plus, this has the effect of also changing the *sonorant* feature to plus as well, because circulating air through the nasal cavity adds sonority. Now, this feature matrix describes the properties of the segment [m].

So each feature is something that we can control independently of the others with our articulators. And changing just one feature is enough to change the properties of a segment. That change might lead to a phonemic contrast within the mental grammar of a language, or it might just result in an allophone of the same phoneme.

It turns out that segments that have a lot of features in common tend to behave the same way within the mental grammar of a language. And we can use these features to group segments into natural classes that capture some of these similarities in their behaviour.

Let's look again at the feature matrix for /b/. If we take away the feature that describes its place of articulation, we end up with a smaller list of features. This smaller list describes not just a single segment, but a class of segments: all the voiced stops. By not mentioning the place feature, we've allowed this matrix to include segments from any place of articulation, as long as they share all these other features. These three segments have all these features in common: they're a natural class. If we remove another feature, the voicing feature, the natural class gets bigger: now we've got a feature matrix that describes all the stops in English, including those that are [+voice] and those that are [-voice]. So you can see that this system of features is very powerful for describing classes of segments that have things in common. We'll learn more about natural classes in the next unit.

This page titled 4.3: Phonetic Segments and Features is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

4.4: Practice Time

Exercise 1. Look back at Exercise 3 in Chapter 4. Given what you concluded about the phonology of Japanese in that exercise, predict whether it would likely be easy or difficult for an L1 speaker of Japanese to learn the English contrast between words like *sip/ship*, *sign/shine*, *class/clash*. Explain how you arrived at your conclusion.

Exercise 2. Look again at Exercise 2 in Chapter 4. In that exercise, you concluded that German has a phoneme [ʃ] that contrasts with another phoneme that has two allophones, [x] and [ç] (a voiceless velar fricative and voiceless palatal fricative, respectively). Given what you know about English phonology, how easy or difficult will it be for an L1 speaker of English to learn this contrast in German? Explain how you arrived at your conclusion.

This page titled 4.4: Practice Time is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

4.5: Natural Classes

It's possible to describe an individual speech segment in terms of its phonetic features. It's also possible to group sounds that share features into natural classes. Natural classes of sounds tend to behave similarly because they have features in common. We can distinguish obstruents, sonorants, glides, and vowels using the major class features, and distinguish in more detail within these major classes using features for place and manner of articulation.



A YouTube element has been excluded from this version of the text. You can view it online here: ecampusontario.pressbooks.pu...guistics/?p=90

Check Yourself

1. In the set of segments listed below, which segment must be excluded to make the remaining segments constitute a natural class?

- [i]
- [e]
- [æ]
- [o]
- [u]

2. In the following set of segments, which segment must be excluded to make the remaining segments constitute a natural class?

- [p].
- [f].
- [t].
- [k]

3. This set of segments constitutes a natural class: [i ɛ æ]. Which segment could you add to the set while still preserving the natural class?

- [ɪ].
- [ɔ].
- [ə].

Answers

This page titled 4.5: Natural Classes is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

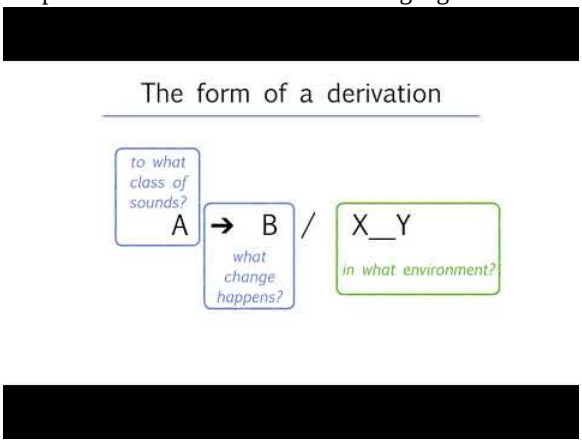
4.6: Summary

You've now learned that infants acquire the phonemic categories of their native language very young, even before they can reliably produce sounds or words! This is one of the reasons that it can be challenging to learn another language when we're older, because our mind has already set up phoneme categories for our native language and has learned to efficiently categorize speech sounds into these native categories. Learning a new language can involve dividing up existing categories into new ones, shifting the boundaries of our L1 categories, or creating entirely new categories for our L2.

This page titled 4.6: Summary is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

4.7: Phonological Derivations

Using the notation of feature matrices, we can create “formulas” that represent the relationship between the phonemic and phonetic levels of representation in our mental grammar. These formulas are known as phonological derivations or phonological rules, and they are meant to represent the unconscious knowledge that every fluent speaker has about the predictable environments where allophonic variation occurs in their language.



A YouTube element has been excluded from this version of the text. You can view it online here: ecampusontario.pressbooks.pu...guistics/?p=96

Check Yourself

1. Which phonological rule accurately represents the process, “vowels become nasalized before a nasal consonant”?

- [-consonant] [-sonorant] [+syllabic] → [+nasal] / ___ [+consonant] [+sonorant] [+nasal]
- [+vowel] [+sonorant] [-nasal] → [+nasal] / [+nasal] [+continuant] ___

2. Which sentence accurately describes the process depicted in this phonological rule?

[-consonant] [+sonorant] [+syllabic] [+continuant] [-voice] → [+voice] / [+sonorant] [+voice] ___ [+sonorant] [+voice]

- Voiceless fricatives become voiced between voiced sonorants.
- Voiceless stop consonants become voiced before or after a voiced sonorant.

3. Which sentence accurately describes the process depicted in this phonological rule?

Ø → [ə] / [+consonant] [CORONAL] [+strident] ___

- The segment [ə] is deleted in the environment of a strident consonant.
- The segment [ə] is epenthesized following a strident consonant.

Answers

This page titled 4.7: Phonological Derivations is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

CHAPTER OVERVIEW

5: Word Forms

5.1: How Babies Learn the Phoneme Categories of Their Language

5.2: How Adults Learn the Phoneme Categories in a New Language

5.3: Practice Time

5.4: Summary

This page titled 5: Word Forms is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

5.1: How Babies Learn the Phoneme Categories of Their Language

If phoneme categories are organized differently in the mental grammar of each language, how does a language learner learn what the relevant categories are for their particular language? Using an experimental technique called habituation, researchers have shown that babies set up the phoneme categories for their native language between six and twelve months of age.



A YouTube element has been excluded from this version of the text. You can view it online here: https://ecampusontario.pressbooks.pu...uistics/?p=104

Check Yourself

1. The phonology of Thai contains a three-way contrast between voiced /b/, voiceless /p/, and aspirated /p^h/. How likely is it that a six-month-old baby growing up in an English-speaking household would be able to hear the difference between Thai [p] and [p^h]?

- Very likely.
- Very unlikely.

2. Arabic phonology includes a contrast between uvular and pharyngeal fricatives. How likely is it that a two-year-old growing up in an English-speaking household would be able to hear the difference between these two places of articulation?

- Very likely.
- Very unlikely.

3. In the various dialects of Chinese, there is no phonemic contrast between tense and lax vowels. How likely is it that a four-month-old baby growing up in a Mandarin Chinese-speaking household would be able to hear the contrast between English [e] and [ɛ]?

- Very likely.
- Very unlikely.

Answers

Video Script

So far we've been focusing primarily on English, but it's important to remember that the phonology of each language is specific to that language: the patterns of which features and segments contrast with each other and which are simply allophones is different in each language of the world. So, for example, we know that in English, aspirated [p^h] and unaspirated [p] are both allophones of a single phoneme. But in Thai, these two segments contrast with each other and are two different phonemes. The phonetic difference is the same, but how that difference is organized in the mental grammar is different in the two languages. This has effects when adults are trying to learn a second language.

Now, it's a stereotype that people who are native speakers of Japanese often have difficulty when they're learning some sounds of English, particularly in learning the difference between English /ɹ/ and /l/. These two sounds are contrastive in English, and we have lots of minimal pairs that provide evidence for that contrast, like *rake* and *lake*, *fall* and *far*, *cram* and *clam*. But neither of these segments is part of the Japanese phoneme inventory. Japanese has one phoneme, the retroflex flap [ɽ], that is phonetically a

little bit similar to English /l/ and a little bit similar to English /ɹ/. So given that English /ɹ/ and /l/ are both phonetically different to the Japanese /ɽ/, and are phonetically different from each other, why is this phonemic contrast hard for Japanese learners to master?

To answer this question, we have to look at babies. Babies learn the phonology of their native language very early. When they are just born, we know that babies can recognize all kinds of phonetic differences. You might be wondering how we can tell what sounds a baby can recognize — we can't just ask them, "Are these two sounds the same or different?" But we can use a **habituation** technique to observe whether they notice a difference or not. Babies can't do much, but one thing they're very good at is sucking. Using an instrument called a pressure transducer, which is connected to a pacifier, we can measure how powerfully they suck. When a baby is interested in something, like a sound that she's hearing, she starts to suck harder. If you keep playing that same sound, eventually she'll get bored and her sucking strength will decrease. When her sucking strength drops off, we say that the baby has habituated to the sound. But if you play a new sound, she gets interested again and starts sucking powerfully again. So we can observe if a baby **notices the difference** between two sounds by observing whether her sucking strength increases when you switch from one sound to the other. For newborn infants, we observe habituation with sucking strength, and for babies who are a little older, we can observe habituation just by where they look: they'll look toward a source of sound when they're interested in it, then look away when they get habituated. If they notice a change in the sound, they'll look back toward the sound.

Using this technique, linguists and psychologists have learned that babies are very good at noticing phonetic differences, and they can tell the difference between all kinds of different sounds from many different languages. But this ability changes within the first year of life. A researcher named Janet Werker at the University of British Columbia looked at children and adults' ability to notice the phonetic difference between three different pairs of syllables: the English contrast /ba/ and /da/, the Hindi contrast between a retroflex stop /ʈa/ and a dental stop /t̪a/, and a Salish contrast between glottalized velar /kʼi/ and uvular /qʼi/ stops. Each of these pairs differs in place of articulation, and within each language, each pair is contrastive. Werker played a series of syllables and asked English-speaking adults to press a button when the syllables switched from one segment to the other. As you might expect, the English-speaking adults were perfect at the English contrast but did extremely poorly on the Hindi and Salish contrasts.

Then Werker tested babies' ability to notice these three phonetic differences, using the head-turn paradigm. These babies were growing up in monolingual English-speaking homes. At age six months, the English-learning babies were about 80-90% successful at noticing the differences in English, in Hindi and in Salish. But by age ten months, their success rate had dropped to about 50-60%, and by the time they were one year old, they were only about 10-20% successful at hearing the phonetic differences in Hindi and Salish. So these kids are only one year old, they've been hearing English spoken for only one year, and they're not even really speaking it themselves yet, but already their performance on this task is matching that of English-speaking adults. The difference between retroflex [ʈa] and dental [t̪a] is not contrastive in English, so the mental grammar of the English-learning baby has already categorized both those sounds as just unusual-sounding allophones of English alveolar /ta/. Likewise, the difference between a velar and a uvular stop, which is contrastive in Salish, is not meaningful in English, so the baby's mind has already learned to treat a uvular stop as an allophone of the velar stop, not as a separate phoneme.

So if we go back to our question of why it's so hard for adults to learn the phonemic contrast in a new language, like the Japanese learners who have difficulty with English /l/ and /ɹ/, the answer is because, by the time they're one year old, the mental grammar of Japanese-learning babies has already formed a single phoneme category that contains English /l/ and /ɹ/ as allophones of that one phoneme. To recognize the contrast in English, a Japanese learner has to develop two separate phoneme categories.

This page titled 5.1: How Babies Learn the Phoneme Categories of Their Language is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts

platform.

5.2: How Adults Learn the Phoneme Categories in a New Language

Just because babies have learned the phoneme categories of their L1 by the time they're one year old doesn't mean that it's impossible to learn phoneme categories in a new language when you're older. Some phoneme contrasts in an L2 will be easy to learn and other will be harder, depending on your L1. This unit explains why.



A YouTube element has been excluded from this version of the text. You can view it online here: https://ecampusontario.pressbooks.pu...uistics/?p=106

Check Yourself

1. In Canadian French, the front tense vowels [y] and [i] become the lax vowels [ʏ] and [ɪ] in certain environments. Is it likely to be easy or difficult for a native speaker of Canadian French to learn the English contrast between /i/ and /ɪ/ (as in *sleep* and *slip*)?

- Easy.
- Difficult.

2. Arabic includes a contrast between a voiceless velar fricative [x] and a voiced velar fricative [ɣ]. Is this contrast likely to be easy or difficult for native speakers of English to learn?

- Easy.
- Difficult.

3. In Cree, voiceless stops become voiced between vowels. Given that Cree has both voiced and voiceless stops in its phonetic inventory, is it likely to be easy or difficult for a native speaker of Cree to learn the phonemic contrast between /b/ and /p/ in English?

- Easy.
- Difficult.

Answers

Video Script

In the last unit, we learned that babies have set up the phoneme categories of their native language by the time they're only twelve months old. This is part of the reason that it can be challenging to learn a new language as an adult. A psycholinguist by the name of Catherine Best has proposed a theory to predict which phoneme contrasts will be hard for second-language learners to learn, and which will be easy. For simplicity, let's use the term **L1** for your native language, the language you learn from infancy. And an **L2** is any language you learn later than that, as an older child, a teenager, or an adult. Best's theory of L2 learning centres around the concepts of phonemes and allophones.

Best predicts that there are two kinds of phoneme contrasts that are easy to learn in an L2. If the L2 has a phoneme contrast that maps onto a phoneme contrast in the learner's L1, then that contrast should be easy to learn in the L2. She also predicts that if the L2 has a phoneme contrast that's completely new, with two segments that don't exist at all in the learner's L1, then this contrast should be easy as well because the learner can set up two new phoneme categories from scratch.

The kind of phoneme contrast that's hard to learn is when two contrasting phonemes in the L2 map onto a single phoneme category in the learner's L1. In this case, the learner will have spent a lifetime treating the phonetic difference as allophonic variation, and not a meaningful contrast, so it's a challenge to learn to pay attention to the difference as meaningful.

Catherine Best and her colleagues have tested this theory by investigating how English-speaking adults learn phonemic contrasts in Zulu. Zulu is a language that has about 27 million speakers, most of them in South Africa. First, researchers asked the English-speakers to tell the difference between voiced and voiceless lateral fricatives in Zulu. English doesn't have lateral fricatives, but English does have lots of pairs of fricatives that contrast in their voicing, so the theory predicts that it should be easy for English listeners to map the voicing difference between the Zulu fricatives onto those English voicing contrasts and recognize this phonetic difference. And that prediction was upheld: The English listeners were about 95% correct.

Then they asked the English speakers to tell the difference between three Zulu clicks: a dental, an alveolar, and a palato-alveolar click. English doesn't have any clicks at all, so the English listeners should be able to simply pay attention to the phonetic differences between these segments, without any interference from their English phonology. The English listeners were about 80% correct at these sounds.

Last, they asked the English listeners to tell the difference between two different kinds of bilabial stops in Zulu: the plosive stop is similar to the English /b/ sound. The other is an implosive /ɓ/, which is made by obstructing airflow at the lips, but when the stop is released, air flows into the mouth instead of out of the mouth. The English adults were only about 65% correct at hearing this difference, not a whole lot better than chance. This is consistent with Best's proposal that because the English listeners have only one phoneme category for voiced bilabial stops, their mental grammar simply treats the implosive as an allophone of that phoneme. So it's very hard to hear the phonetic difference between the two sounds in the L2 because the mental grammar of the L1 considers them both members of the same phoneme category.

This page titled 5.2: How Adults Learn the Phoneme Categories in a New Language is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

5.3: Practice Time

Exercise 1. For each of the following words, identify the affix(es) in the word. For each affix, say whether it is derivational or inflectional. For inflectional affixes, say what grammatical information the affix indicates.

purity
newest
misunderstand
Canadian
unlikely
weaken
nieces
expectantly

Exercise 2. The regular English plural morpheme has several allomorphs, including two different spellings (*-s* and *-es*) and three different pronunciations [s, z, ɨz]. Say the following words aloud to yourself and determine which allomorph appears on each word. The form of the allomorph depends on the final sound in the base. What is the natural class of sounds that predicts the appearance of each allomorph?

books	chips	buses	fans
tomatoes	wishes	cuffs	farms
cars	judges	shirts	rainbows
quizzes	myths	gloves	flies
grapes	caves	peas	toys
clocks	beaches	dances	

This page titled 5.3: Practice Time is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

5.4: Summary

In this chapter, we saw that many words are made up of meaningful pieces called morphemes. In English, the most common bound morphemes are suffixes and prefixes, which can be affixed to words to derive new words, or can convey grammatical information via inflection. Although English has a very productive system of derivational morphology, its inflectional morphology is quite sparse. We looked at some Indigenous languages to examine the kinds of grammatical information that can be represented with inflectional morphemes.

This page titled 5.4: Summary is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

CHAPTER OVERVIEW

6: Combining Words

6.1: Words and Morphemes
6.2: Allomorphs
6.3: Inflectional Morphology
6.4: Derivational Morphology
6.5: Inflectional Morphology in Some Indigenous Languages
6.6: Practice Time
6.7: Summary

This page titled 6: Combining Words is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

6.1: Words and Morphemes

What's a word? It seems almost silly to ask such a simple question, but if you think about it, the question doesn't have an obvious answer. A famous linguist named Ferdinand de Saussure said that a word is like a coin because it has two sides to it that can never be separated. One side of this metaphorical coin is the **form** of a word: the sounds (or letters) that combine to make the spoken or written word. The other side of the coin is the **meaning** of the word: the image or concept we have in our mind when we use the word. So a word is something that links a given form with a given meaning.

Linguists have also noticed that words behave in a way that other elements of mental grammar don't because words are **free**. What does it mean for a word to be free? One observation that leads us to say that words are free is that they can appear in **isolation**, on their own. In ordinary conversation, we don't often utter just a single word, but there are plenty of contexts in which a single word is indeed an entire utterance. Here are some examples:

> What are you doing? Cooking.
>
> What are you cooking? Soup.
>
> How does it taste? Delicious.
>
> Can I have some? No.

Each of those single words is perfectly grammatical standing in isolation as the answer to a question.

Another reason we say that words are free is that they're **moveable**: they can occupy a whole variety of different positions in a sentence. Look at these examples:

> Penny is making soup.
>
> Soup is delicious.
>
> I love to eat soup when it's cold outside.

The word *soup* can appear as the last word in a sentence, as the first word, or in the middle of a sentence. It's free to be moved around.

The other important observation we can make about words is that they're **inseparable**: We can't break them up by putting other pieces inside them. For example, in the sentence,

> Penny cooked some carrots.

The word *carrot* has a bit of information added to the end of it to show that there's more than one carrot. But that bit of information can't go just anywhere: it can't interrupt the word *carrot*:

> *Penny cooked some car-s-rot.

This might seem like a trivial observation – of course, you can't break words up into bits! – but if we look at a word that's a little more complex than *carrots* we see that it's an important insight. What about:

> Penny bought two vegetable peelers.

That's fine, but it's totally impossible to say:

> *Penny bought two vegetables peeler.

even though she probably uses the peeler to peel multiple vegetables. It's not that a plural *-s* can't go on the end of the word *vegetable*; it's that the word *vegetable peeler* is a single word (even though we spell it with a space between the two parts of it). And because it's a single word, it's inseparable, so we can't add anything else into the middle of it.

So we've seen that **a word is a free form that has a meaning**. But you've probably already noticed that there are other forms that have meaning and some of them seem to be smaller than whole words. **A morpheme is the smallest form that has meaning**. Some morphemes are **free**: they can appear in isolation. (This means that some words are also morphemes.) But some morphemes can only ever appear when they're attached to something else; these are called **bound** morphemes.

Let's go back to that simple sentence,

Penny cooked some carrots.

It's quite straightforward to say that this sentence has four words in it. We can make the observations we just discussed above to check for isolation, moveability, and inseparability to provide evidence that each of *Penny*, *cooked*, *some*, and *carrots* is a word. But there are more than four units of meaning in the sentence.

Penny cook-ed some carrot-s.

The word *cooked* is made up of the word *cook* plus another small form that tells us that the cooking happened in the past. And the word *carrots* is made up of *carrot* plus a bit that tells us that there's more than one carrot.

That little bit that's spelled *–ed* (and pronounced a few different ways depending on the environment) has a consistent meaning in English: past tense. We can easily think of several other examples where that form has that meaning, like *walked*, *baked*, *cleaned*, *kicked*, *kissed*. This *–ed* unit appears consistently in this form and consistently has this meaning, but it never appears in isolation: it's always attached at the end of a word. It's a **bound morpheme**. For example, if someone tells you, "I need you to walk the dog," it's not grammatical to answer "-ed" to indicate that you already walked the dog.

Likewise, the bit that's spelled *–s* or *–es* (and pronounced a few different ways) has a consistent meaning in many different words, like *carrots*, *bananas*, *books*, *skates*, *cars*, *dishes*, and many others. Like *–ed*, it is not free: it can't appear in isolation. It's a **bound morpheme** too.

If a word is made up of just one morpheme, like *banana*, *swim*, *hungry*, then we say that it's **morphologically simple**, or **monomorphemic**.

But many words have more than one morpheme in them: they're **morphologically complex** or **polymorphemic**. In English, polymorphemic words are usually made up of a **root** plus one or more **affixes**. The root morpheme is the single morpheme that determines the core meaning of the word. In most cases in English, the root is a morpheme that could be free. The affixes are bound morphemes. English has affixes that attach to the end of a root; these are called **suffixes**, like in *book<u>s</u>*, *teach<u>ing</u>*, *happi<u>er</u>*, *hope<u>ful</u>*, *sing<u>er</u>*. And English also has affixes that attach to the beginning of a word, called **prefixes**, like in *<u>un</u>zip*, *<u>re</u>heat*, *<u>dis</u>agree*, *<u>im</u>possible*.

Some languages have bound morphemes that go into the middle of a word; these are called **infixes**. Here are some examples from Tagalog (a language with about 24 million speakers, most of them in the Philippines).

[takbuh]	*run*	[tumakbuh]	*ran*
[lakad]	*walk*	[lumakad]	*walked*
[bili]	*buy*	[bumili]	*bought*
[kain]	*eat*	[kumain]	*ate*

It might seem like the existence of infixes is a problem for our claim above that words are inseparable. But languages that allow infixation do so in a systematic way — the infix can't be dropped just anywhere in the word. In Tagalog, the position of the infix depends on the organization of the syllables in the word.

This page titled 6.1: Words and Morphemes is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

6.2: Allomorphs

The previous unit showed us that a **morpheme** is the smallest unit that pairs a consistent form with a consistent meaning. But when we say that the form of a morpheme is consistent, there's still some room for variability in the form. Think back to what you know about phonology and remember that a given phoneme can show up as different allophones depending on the surrounding environment. Morphemes work the same way: a given morpheme might have more than one **allomorph**. Allomorphs are forms that are related to each other but slightly different, depending on the surrounding environment.

A simple example is the English word *a*. It means something like "one of something, but not any particular one", like in these examples:

a book
a skirt
a friend
a phone call

But if the word following *a* begins with a vowel and not a consonant, then the word *a* changes its form:

an apple
an ice cream cone
an iguana
an idea

The two forms *a* and *an* are slightly different in their form, but they clearly both have the same meaning. And each one shows up in a different predictable environment: *a* before words that start with consonants and *an* before words that begin with vowels.

Another example of allomorphy in English is in the plural morpheme. In written English, the form of the plural morpheme is spelled *-s*, as in:

carrots
books
hats
friends
apples
iguanas

But it's spelled *–es* in words like:

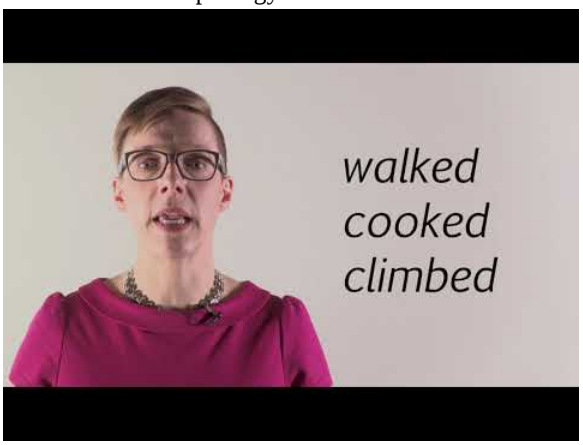
churches
bushes
quizzes

And in fact, even in the cases where it's spelled *-s*, it's pronounced as [s] for words that end in a voiceless segment (*carrots*, *books*, *cliffs*) and as [z] for words that end in voiced sounds (*worms*, *dogs*, *birds*). So it's got two written forms (*-s* and *-es*) and three spoken forms ([s], [z], [ɨz]), but a consistent meaning of "more than one". Each form is an allomorph of the plural morpheme. Can you figure out what the relevant environment is that predicts which allomorph appears where?

This page titled 6.2: Allomorphs is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

6.3: Inflectional Morphology

Bound morphemes can do one of two different jobs. Inflectional morphology conveys grammatical information, such as number, tense, agreement or case. English has relatively few inflectional morphemes, but many other languages have much richer systems of inflectional morphology.



A YouTube element has been excluded from this version of the text. You can view it online here: https://ecampusontario.pressbooks.pub/essentialsoflinguistics/?p=117

Check Yourself

1. What type of grammatical information does the inflectional affix in the word *speeches* communicate?

- Number.
- Tense.
- Subject agreement.
- Case.

2. What type of grammatical information does the inflectional affix in the word *climbed* communicate?

- Number.
- Tense.
- Subject agreement.
- Case.

3. What type of grammatical information does the inflectional difference between *he* and *him* indicate?

- Number.
- Tense.
- Subject agreement.
- Case.

Answers

Video Script

We saw in our last units that words can be made up of morphemes, which are the smallest linguistic unit that links form with meaning. Morphemes can do a couple of quite different jobs in a word.

Inflectional morphemes are morphemes that add grammatical information to a word. When a word is inflected, it still retains its core meaning, and its category stays the same. We've actually already talked about several different inflectional morphemes:

The **number** on a noun is inflectional morphology. For most English nouns the inflectional morpheme for the **plural** is an *–s* or *–es* (e.g., *books*, *cars*, *dishes*) that gets added to the singular form of the noun, but there are also a few words with irregular plural morphemes. Some languages also have a special morpheme for the **dual** number, to indicate exactly two of something. Here's an

example from Manam, one of the many languages spoken in Papua New Guinea. You can see that there's a morpheme on the noun woman that indicates dual, for exactly two women, and a different morpheme for plural, that is, more than two women.

Manam (Papua New Guinea)		
/áine ŋara/	*that woman*	singular
/áine ŋaradiaru/	*those two women*	dual
/áine ŋaradi/	*those women*	plural

The **tense** on a verb is also inflectional morphology. For many English verbs, the past tense is spelled with an *–ed*, (*walked*, *cooked*, *climbed*) but there are also many English verbs where the tense inflection is indicated with a change in the vowel of the verb (*sang*, *wrote*, *ate*). English does not have a bound morpheme that indicates future tense, but many languages do.

Another kind of inflectional morphology is **agreement** on verbs. If you've learned French or Spanish or Italian, you know that the suffix at the end of a verb changes depending on who the subject of the verb is. That's agreement inflection. Here are some examples from French. You can see that there's a different morpheme on the end of each verb depending on who's doing the singing.

French		
1st	je chante	*I sing*
2d	tu chantes	*you sing*
3d	elle chante	*she sings*
1st	nous chantons	*we sing*
2d	vous chantez	*you (pl.) sing*
3d	elles chantent	*they sing*

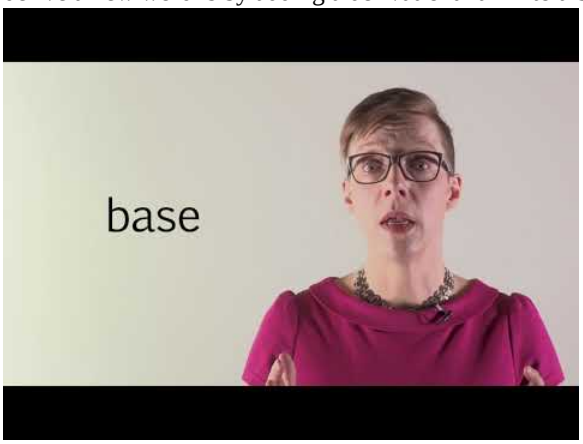
And in some languages, the morphology on a noun changes depending on the noun's role in a sentence; this is called **case** inflection. Take a look at these two sentences in German: The first one, *Der Junge sieht Sofia*, means that, "The boy sees Sofia". Look at the form of the phrase, *the boy*, "*der Junge*". Now, look at this other sentence, *Sofia sieht den Jungen*, which means that "Sofia sees the boy". In the first sentence, the boy is doing the seeing, but in the second, the boy is getting seen, and the word for boy, *Junge* has a different morpheme on it to indicate its different role in the sentence. That's an example of **case** morphology, which is another kind of inflection.

German	
Der Junge sieht Sofia.	*The boy sees Sofia.*
Sofia sieht den Jungen	*Sofia sees the boy.*

This page titled 6.3: Inflectional Morphology is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

6.4: Derivational Morphology

The other job that morphemes do is derivation, the process that creates new words. In English, one of the most common ways to derive a new word is by adding a derivational affix to a base. The newly-derived word can then serve as a base for another affix.



A YouTube element has been excluded from this version of the text. You can view it online here: https://ecampusontario.pressbooks.pub/essentialsoflinguistics/?p=119

Check Yourself

1. Which of the following best describes the derivation of the word *assignment*?

- Noun + *–ment* ➔ Verb.
- Adjective + *–ment* ➔ Noun.
- Verb + *–ment* ➔ Noun.
- Verb + *–ment* ➔ Verb.

2. Which of the following best describes the derivation of the word *skillful*?

- Adjective + *–ful* ➔ Verb.
- Adjective + *–ful* ➔ Adjective.
- Verb + *–ful* ➔ Noun.
- Noun + *–ful* ➔ Adjective.

3. Which of the following best describes the derivation of the word *simplify*?

- Verb + *–ify* ➔ Verb.
- Adjective + *–ify* ➔ Verb.
- Noun + *–ify* ➔ Adjective.
- Adjective + *–ify* ➔ Noun.

Answers

Video Script

The last unit talked about inflection, which is one of the jobs that morphology can do. The other big job that morphemes have is a **derivation**. The derivation is the process of creating a new word. The new, derived word is related to the original word, but it has some new component of meaning to it, and often it belongs to a new category.

One of the most common ways that English derives new words is by affixing a derivational morpheme to a **base**. For example, if we start with a verb that describes an action, like *teach* and we add the morpheme *–er*, we derive a morphologically complex noun,

teacher, that refers to the person who does the action of teaching. That same *-er* morpheme does the same job in *singer*, *dancer*, *baker*, and *writer*.

Verb	Suffix	Noun
teach	-er	teacher
sing	-er	singer
dance	-er	dancer
bake	-er	baker
write	-er	writer

If we start with an adjective like *happy* and add the suffix *–ness*, we derive the noun that refers to the state of being that adjective, *happiness*.

Verb	Suffix	Noun
teach	-er	teacher
sing	-er	singer
dance	-er	dancer
bake	-er	baker
write	-er	writer

Adding the suffix *–ful* to a noun derives an adjective, like *hopeful*.

Noun	Suffix	Adjective
hope	-ful	hopeful
joy	-ful	joyful
care	-ful	careful
dread	-ful	dreadful

Adding the suffix *–ize* to an adjective like *final* derives a verb like *finalize* .

Adjective	Suffix	Verb
final	-ize	finalize
modern	-ize	modernize
social	-ize	socialize
public	-ize	publicize

Notice that each of the morphologically complex derived words is related in meaning to the base, but it has a new meaning of its own. English also derives new words by prefixing, and while adding a derivational prefix does lead to a new word with a new meaning, it often doesn't lead to a category change.

Prefix	**Verb**	**Verb**
re-	write	rewrite
re-	read	reread
re-	examine	reexamine
re-	assess	reassess

Each instance of derivation creates a new word, and that new word could then serve as the **base** for another instance of derivation, so it's possible to have words that are quite complex morphologically.

For example, say you have a machine that you use to compute things; you might call it a *computer* (*compute* + *-er*).Then if people start using that machine to perform a task, you could say that they're going to *computerize* (*computer* + *-ize*) that task. Perhaps the *computerization* (*computerize* + *-ation*) of that task makes it much more efficient. You can see how many words have many steps in their derivations.

An interesting thing to note is that once a base has been inflected, then it can no longer go through any derivations. We can inflect the word *computer* so that we can talk about plural computers, but then we can't do derivation on the plural form (**computers-ize*). Likewise, we can add tense inflection to the verb *computerize* and talk about how yesterday we *computerized* something, but then we can't take that inflected form and use it as the base for a new derivation (**computerized-ation*). Inflection always occurs as the last step in word formation.

This page titled 6.4: Derivational Morphology is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

6.5: Inflectional Morphology in Some Indigenous Languages

Talking about morphology when your primary language is English is sometimes a little disappointing because English does not have very much inflectional morphology. Many other languages do much more interesting jobs with inflectional morphology. Many of the Indigenous Languages spoken by the First Peoples of what is currently Canada have rich morphological systems that communicate a great deal of information.

Number in Inuktitut

Inuktitut is one of the dialects spoken by the Inuit people who live in the Arctic region. There is a good deal of dialect variation across the Inuit languages. Inuktitut is the variety that is the official language of the territory of Nunavut, and has about 40,000 speakers.

All languages make a distinction between singular and plural nouns, but some languages, like Inuktitut, also use inflectional morphology to indicate **dual** number when there are exactly two of something, as in the following examples:

matu	*door*
matu**uk**	*doors (two)*
matu**it**	*doors (three or more)*

nuvuja	*cloud*
nuvuja**ak**	*clouds (two)*
nuvuja**it**	*clouds (three or more)*

qarasaujaq	*computer*
qarasauj**aak**	*computers (two)*
qarasauja**it**	*computers (three or more)*

Subject-Verb Agreement in Inuktitut

The three-way distinction between singular, dual, and plural in Inuktitut applies not only to nouns but also to verbs that agree with their noun subjects:

nirijunga	*I eat*
nirijuguk	*the two of us eat*
nirijugut	*we (three or more) eat*

nirijutit	*you (one of you) eat*
nirijusik	*you two eat*
nirijusi	*you (three or more) eat*

nirijuq	*he or she eats*
nirijuuk	*the two of them eat*
nirijut	*they (three or more) eat*

Animacy in Cree

The Cree languages are the Indigenous languages that have the greatest number of speakers, about 80,000 according to Statistics Canada's 2016 Census.

You might know a language that categorizes nouns according to their gender, like French, which makes a distinction between masculine and feminine nouns, adjectives, and determiners. Of course, grammatical gender has a quite arbitrary relationship to concepts of social and biological gender. Other languages categorize nouns along different criteria. Cree distinguishes words along a dimension called **animacy**. The animacy distinction is approximately related to whether something is alive or not, but the categories for animate vs. inanimate things are somewhat arbitrary, just the like the categories for masculine vs. feminine things in languages that mark grammatical gender. The animacy of a noun affects which demonstrative determiners may be used with it, the form of the plural morphology, and the morphology of the verb that agrees with it.

In Plains Cree (Nêhiyawêwin), the noun *atim* (dog) is animate, while *astotin* (hat) is inanimate. The sentences below shows how the noun's animacy affects the other words in the sentence.

	animate	inanimate
singular	atim*dog*	astotin*hat*
plural	atim**wak***dogs*	astotin**a***hats*
singular demonstrative	**awa** atim*this dog*	**ôma** astotin*this hat*
plural demonstrative	**ôki** atim**wak***these dogs*	**ôhi** astotin**a***these hats*
singular transitive verb	niwâpam**âw** atim.*I see a dog.*	niwâpa**htên** astotin*I see a hat.*
plural transitive verb	niwâpamâw**ak** atim**wak**.*I see dogs.*	niwâpa**htên** astotin**a***I see hats.*

Pronouns

All languages make at least a three-way distinction among pronouns — the first person (*I/me* in English) is the person talking; second person (*you*) is the person being addressed, and third person (*she, he, they, it*, etc.) is anybody or anything else. Some languages make even more distinctions in pronouns.

In Ojibwe (Anishnaabemowin), which has about 20,000 speakers, there are two pronouns for the first-person plural. The pronoun *niinwi* refers to the speaker plus other people but not the person being addressed (that is, "we but not you"). This is known as the exclusive we. The pronoun for inclusive we ("all of us including you") is *kiinwi*. The distinction between inclusive and exclusive *we* is sometimes referred to as **clusivity**.

Cree also makes an inclusive/exclusive distinction in the first-person plural. The inclusive form is *niyanân* and the exclusive form is *kiyânaw*.

Subject-Verb Agreement in Cree

In the third person, Cree makes a distinction between **proximate** and **obviative** third person. You might think of this distinction as something similar to the near/far distinction between *this* and *that* in English, where *this* is used for something that is closer to the speaker and *that* is for something farther away. But, like in English, the proximate/obviative distinction is not just about physical distance; it can also allude to distance in time, or within a conversation, to someone that has been mentioned recently (proximate) versus someone that is being mentioned for the first time (obviative). The distinction is marked on the verbal morphology, as illustrated below:

proximate	Regina wîkiwak. *They live in Regina.*	kiskinwahamâkosiwak. *They are in school.*
obviative	Regina wîkiyiwa. *Their friend/someone else lives in Regina.*	kiskinwahamâkosiyiwa. *Their friend/someone else is in school.*

These few examples illustrate that the rich morphological systems of these languages can communicate a great deal of information efficiently.

This page titled 6.5: Inflectional Morphology in Some Indigenous Languages is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

6.6: Practice Time

Exercise 1. In the following paragraph, identify all the nouns, verbs, and adjectives:

"The main door of the school is on the side away from the town. The drive leading to it is long, cutting straight across between the tennis courts after it leaves the big wooden gates, then curving round the extreme edge of the gardens until, after a long, straight stretch up the slope, it ends in the courtyard by the front door. It takes about five minutes' fast walking to get from the gates to the grateful seclusion of the court during which you become thoroughly self-conscious as you notice the eyes watching you from the windows. Once you reach the corner of the house you are safe."

Exercise 2. In the following sentences, give the category of all the words from closed-class categories:

"All the rooms on the ground floor open off the T-shaped front hall. When you come in from the courtyard the doors of Mlle Tourain's study are directly opposite you; on your right are the kitchens and laundry-rooms and between them and the study, occupying the whole corner, is the dining-room. On your left, behind the big dark staircase which curves up to the first floor, is the girls' living-room, and in front of it on the south-east corner, the main classroom."

Exercise 3. In the following sentences, identify all the modal auxiliaries, non-modal auxiliaries, and the main verb uses of *have* and *be*:

"Some day they are going to get it mended but at present they are too busy, for Mlle Tourain is correcting proofs for the second volume of her work on the history of Swiss independence, which will appear next autumn, and she, Mary Ellerton, has no time for anything, since she dismissed the housekeeper and has her job as well as that of assistant principal."

Exercise 4. Compound words in English are variable in their spelling: some are spelled with no space between the elements of the compound (*redhead*, *greenhouse*), some are spelled with a space (*ice cream*, *ski boots*), and some are spelled with a hyphen between the elements (*gluten-free*, *long-term*). Identify all the compounds in the following sentences:

"Amélie Tourain leaned forward a little and switched on her desk light."

"The third occasion on which she said something funny the headmistress had glanced at her over Doris Anderson's note-book, then at Mlle Devaux, and after that things went much easier with the grammar teacher."

"Mlle Tourain was sitting back in her chair now, and had begun to tap the rubber end of her pencil against the brass ink-pot."

"She had spoken with an undercurrent of passion running through her words, as she was speaking now."

All of the texts for the exercises above are taken from Swiss Sonata by Gwethalyn Graham, which is in the Public Domain in Canada.

This page titled 6.6: Practice Time is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

6.7: Summary

In this chapter, you've learned how to categorize words according to their behaviour, which categories are open to new members, and which categories are not. You've also learned that compounding is a very productive means of deriving new words in English by combining two words. While most compounds are endocentric and have a head that determines the meaning and category of the word, for exocentric compounds, the meaning of the compound drifts over time, leaving the compound without a head.

This page titled 6.7: Summary is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

CHAPTER OVERVIEW

7: Forming Sentences

7.1: Practice Time

7.2: Summary

7.3: Nouns, Verbs and Adjectives- Open Class Categories

7.4: Compound Words

7.5: Closed Class Categories (Function Words)

7.6: Auxiliaries

7.7: Neurolinguistics- Syntactic Category Differences in the Brain

---

This page titled 7: Forming Sentences is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

7.1: Practice Time

Exercise 1. The following sentences are taken from Swiss Sonata by Gwethalyn Graham, which is in the Public Domain in Canada. For each sentence, use as many constituency tests as are appropriate to determine whether the underlined portion is a constituent of that sentence.

- She was wearing a shabby, unbecoming black dress.
- One of the maids knocked on the door and entered with a telegram.
- Vicky stopped in her room to brush her hair slowly and carefully.
- Vicky stopped in her room to brush her hair slowly and carefully.

Exercise 2. For each of the following sentences, identify the subcategory of each verb and identify the grammatical role of each NP.

- Simon knew his parents would be angry.
- Senate will discuss the new bill in Parliament after the holiday.
- Gwen phoned her grandmother on the weekend.
- Amani realized Genet had finished the project without her.

Exercise 3. Draw tree diagrams consistent with x-bar principles to illustrate the structure of each of the sentences in Exercise 2.

Exercise 4. Draw tree diagrams consistent with x-bar principles to illustrate the Deep and Surface Structures of the following questions:

- Who will you vote for in the next election?
- What did the waiter say the specials were tonight?
- Does Resa know where your parents live?

This page titled 7.1: Practice Time is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

7.2: Summary

Chapter 8 introduced a theory that the syntax component of our mental grammar is quite simple: It consists of only two operations, MERGE and MOVE. The operation MERGE does exactly one thing, namely, it combines words and features to create x-bar structures. X-bar theory claims that every phrase in every sentence in every language of the world is an x-bar phrase. There are only two kinds of things in x-bar phrases, heads and other phrases. Inside a given phrase, another phrase can occupy the position of complement, specifier, or adjunct. The structure that MERGE generates is the Deep Structure of a sentence, which exists in our mind. The operation MOVE takes the Deep Structure and moves some words or phrases to a new position in the Surface Structure of the sentence, which is the form of the sentence that we speak and observe. When MOVE operates, it always moves heads to other head positions, and phrases to other phrase positions. When wh-phrases move, their Surface Structure position is always SpecCP. And the very useful notation of tree diagrams allows us to illustrate how Deep Structures and Surface Structures are represented in our minds.

This page titled 7.2: Summary is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

7.3: Nouns, Verbs and Adjectives- Open Class Categories

In Linguistics, we observe how parts of language behave. When we find a set of words that all behave similarly, we can group them into a category, specifically, into a syntactic category. You might have learned about some of these categories as “parts of speech”. This unit gives an overview of the behaviour of the biggest categories.

You’ve probably learned that **nouns** are words that describe a person, place or thing. But when we’re studying morphology and syntax, we categorize words according to their behaviour, not according to their meaning.There are two elements to a word’s behaviour:

- What inflectional morphemes does the word take?
- What is the word’s syntactic distribution? In other words, what position does it occupy in a sentence?

What behaviour can we observe that allows us to categorize words as nouns? Looking at the inflectional morphology, we observe that most nouns in English have a singular and a plural form:

singular	plural
tree	trees
book	books
song	songs
idea	ideas
goal	goals

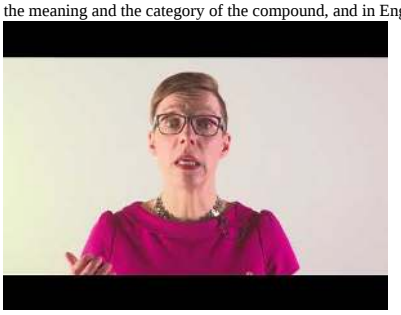
English uses a plural morpheme on a noun to indicate that there is more than one of something. But there is a **subcategory** of nouns that don’t have plural forms. **Mass nouns** like *rice*, *water*, *money*, *oxygen* refer to things that aren’t really countable, so the nouns don’t get pluralized. Nouns that refer to abstract things (such as *justice*, *beauty*, *happiness*) behave like mass nouns too. If they don’t have plural forms, why do we group them into the larger category of nouns? It’s because their syntactic distribution behaves like that of count nouns. Most English nouns, singular, plural, or mass, can appear in a phrase following the word *the*:

the tree, the trees
the book, the books
the song, the songs
the idea, the ideas
the goal, the goals
the rice
the money
the beauty (e.g., the beauty of the scenery)
the happiness (e.g., the happiness of the children)

This page titled 7.3: Nouns, Verbs and Adjectives- Open Class Categories is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

7.4: Compound Words

One very productive way that new words are derived in English is by compounding, that is, combining two free morphemes to create a new word. Endocentric compounds have a head that determines the meaning and the category of the compound, and in English, the head is the second part of the compound.



A YouTube element has been excluded from this version of the text. You can view it online here: ecampusontario.pressbooks.pub/essentialsoflinguistics/?p=132

Check Yourself

1. In the sentence, “The room contained a bearskin rug,” what kind of compound is *bearskin*?

- Endocentric.
- Exocentric.

2. In the sentence, “Randy worked as a cowhand on the ranch,” what kind of compound is *cowhand*?

- Endocentric.
- Exocentric.

3. In the sentence, “Hyunji manages a bookshop,”, what kind of compound is *bookshop*?

- Endocentric.
- Exocentric.

Answers

Video Script

We’ve seen that English frequently uses affixation to derive new words. Affixation is quite **productive**, meaning that our mental grammar uses the process for many different words, even for new words that come into the language. You’ve probably generated new words yourself sometimes by adding affixes to existing words.

Another extremely productive derivational process in English is **compounding**. Compounding is different from affixation. In affixation, a bound morpheme is affixed to a base. Compounding derives a new word by joining two morphemes that would each usually be free morphemes.

For example, if I take the free morpheme *green*, an adjective, and combine it with the free morpheme *house*, a noun, I get the new word *greenhouse*. We can tell that this is a new word because its meaning is different from what we would get if we just combined the two words to make a phrase. We could walk down the street describing houses: This is a brown house and this one here is a tall house and here is a red house and here is a greenhouse. But a greenhouse is something different from a house that’s green! It’s a new word, derived by compounding.



Credit: Joe Shlabotnik on Flickr; Attribution 2.0 Generic (CC BY 2.0)





Image "Greenhouse at Wilson Farm, East Lexington MA" by John Phelan is licensed under CC BY 3.0.

Another way that words derived by compounding differ from words derived by affixation is that a compound word doesn't really have a base or root that determines the meaning of the word. Instead, both pieces of a compound make a sizeable contribution to the meaning. For example, *yoga pants* are pants that you wear to do yoga, and *emerald green* is the particular colour of green that emeralds are. So it doesn't make sense to say that compounds have a root.

On the other hand, there is one part of a compound that has a special role, which we can see if we think about the categories of the words that make up a compound. If you look at these examples,

dry clean
stir fry
outrun
power wash

Each compound is made up of a different category of the word on the left plus a verb on the right. But in each case, the compound word is a verb. Even if both parts of a compound contribute to the meaning of the compound, it's the **head** of a compound that determines its category. We say that English is a **head-final** language because in English the second part of the compound determines the category of the compound. Some languages are **head-initial**, with the head as the first element in a compound.

In many compounds, the head determines the category and also constrains the meaning of the compound. So *dog food* is a kind of food, not a kind of dog, and *yoga pants* are a kind of pants, not a variety of yoga. Compounds like this, where the meaning relationship between the head and the whole compound is obvious, are called **endocentric**. But in some compounds, the meaning relationship is not so transparent. For example, a *redhead* is a person, not a kind of head; a *nest egg* is money that you've saved, not a kind of egg; a *workout* is not a particular kind of out, and *facebook* is not a book at all! Compounds where the meaning of the head does not predict the meaning of the compound are said to be **exocentric**.

This page titled 7.4: Compound Words is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

7.5: Closed Class Categories (Function Words)

In Unit 7.1 we saw that linguists group words into syntactic categories according to how they behave. Content words convey a lot of the meaning of a sentence. But not many sentences would be complete if they contained only nouns, verbs, or adjectives. There are also several smaller categories of words called **closed-class categories** because the language does not usually add new words to these categories. These categories don't have many members, maybe only a few dozen, in contrast with the many thousands of words in the open-class categories. They're the **function words** or **non-lexicalcategories** that do a lot of grammatical work in a sentence but don't necessarily have obvious semantic content.

The category of **determiners** doesn't have many members but its members occur very frequently in English. The two little words *the* and *a* are the most recognizable members. Determiners most often appear before a noun, as in:

a student

an orange

the snake

the ideas

Any word that can appear in the same position as the counts as a determiner, like demonstratives:

those students

these oranges

that snake

this idea

Quantifiers and numerals also behave like determiners:

many students

twelve oranges

most snakes

several ideas

And the words that you might have encountered as "possessive adjectives" or "possessive pronouns" behave like determiners as well:

my sister

your idea

their car

The category of **prepositions** seems to have slightly more obvious semantic content than most other closed classes. Prepositions often represent relationships in space and time. They also have consistent syntactic distribution, usually appearing with a noun phrase immediately following them:

on the table

in the basket

around the block

through the centuries

near campus

after class

A very small category of words that does an important job are the **conjunctions**. There are only three conjunctions, *and, or, but*. The job that conjunctions do is to conjoin two words or phrases that belong to the same category:

oranges and lemons

brushed her teeth and went to bed

strong and fast

soup or salad

singing or dancing

hated her roommate but loved her roommate's sister

small but mighty

You might have learned that words like *because* and *although* are a type of conjunction, but they don't behave like *and*, *or*, *but*. Their behaviour is more similar to a category of words we label as **complementizers**. Complementizers are function words that introduce a clause, which is a sentence embedded inside a larger sentence:

Sam told us that she loved baseball.

She hoped that the Blue Jays would win the World Series.

Leilani wondered whether it would rain that afternoon.

She asked her roommate if she had heard the forecast.

The roommate checked the forecast because she wanted to go for a run.

She decided to go running although a storm was forecast.

Mel washed the dishes while the cupcakes were in the oven.

This page titled 7.5: Closed Class Categories (Function Words) is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

7.6: Auxiliaries

Auxiliaries are what you might have called “helping verbs” when you first learned about grammar: they help a lexical verb by providing grammatical information about a verb’s tense or aspect, or other subtle elements of meaning. There are nine **modal auxiliaries**, which never change their form because they are never inflected.

Kieran can sing really well.

Laura could climb that rock wall.

We shall decide by drawing straws.

You should take a nap.

The guests will arrive soon.

Malik would like to read that book.

You may leave after you’ve finished the test.

The road might be slippery.

Drivers must obey all traffic laws.

The verbs *have*, *be*, and *do* sometimes behave like auxiliaries and sometimes like ordinary lexical verbs. Unlike the modal auxiliaries, *have*,*be* and *do* get inflected (*had*, *has*, *having*, *am*, *is*, *are*, *was*, *were*, *been*, *being*, *did*, *done*, *doing*), so even when they are auxiliaries, they are **non-modal**. Their inflection is not a clue to whether they are auxiliaries or not, so we have to look at their behaviour in the context of a sentence.

If a sentence includes a lexical verb or main verb, then *have*, *be* or *do* in that sentence is likely to be an auxiliary, helping the lexical verb. In the following examples, the auxiliary verbs are underlined and the lexical verbs (also known as main verbs) are bolded:

Arlene is**writing** a novel.

Beulah has**arrived** in Saskatoon.

Carmen is**planning** her vacation.

Doris did not **buy** any vegetables.

Evlien has been**thinking** about switching programs.

In addition to their auxiliary functions, *have*, *be* and *do* also have some lexical meaning of their own. If there’s no other verb in the clause, then *have*, *be*, or *do* is probably the main verb of a clause. In these examples the lexical verbs are bolded:

Foster **is** proud of his sister.

Green vegetables **are** important for good health.

Harold **has** an idea for an app.

Ira **did** his homework before supper.

Javier **had** a big party.

If *have*, *be* or *do* serves as the lexical verb, then it might also have some auxiliaries helping out:

Foster has**been** proud of his sister.

Green vegetables might**be** important for good health.

Harold did**have** an idea for an app.

Ira could have been**doing** his homework before supper.

Javier is**having** a big party.

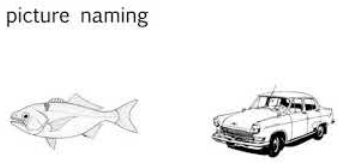
Notice that not every sentence has an auxiliary, but every sentence does have a lexical verb.

This page titled 7.6: Auxiliaries is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

7.7: Neurolinguistics- Syntactic Category Differences in the Brain

In linguistics, we group words into categories according to how they behave in their morphology and in sentences. This unit shows that different categories of words also lead to different responses in the brain.

[redacted]



[redacted]

A YouTube element has been excluded from this version of the text. You can view it online here: ecampusontario.pressbooks.pub/essentialsoflinguistics/?p=138

Check Yourself

1. Comparing the following sets of words, which would you predict would lead to greater blood flow in more areas of the brain?

- Humming, singing, whistling.
- Piano, flute, guitar.
- Gloves, scarf, hat.

2. When shown a picture of a pair of tongs, a patient describes the picture, “You pick up things with it”. Which type of aphasia is this response more typical of?

- Anomic aphasia.
- Agrammatic aphasia.

3. When describing an injury to his knees, a patient says, “no good uh ache and uh uh uh knees and ankles uh home doctor and legs”. Which type of aphasia is this response more typical of?

- Anomic aphasia.
- Agrammatic aphasia.

Answers

Video Script

We’ve seen that we can group words into categories according to how they behave. We know that words within a particular **syntactic category** behave similarly to the other words in that category. They’re similar in their inflectional morphology, and in their syntactic distribution, that is, what positions they can occupy in a sentence. That’s some linguistic evidence that syntactic categories are real. There’s also **neurolinguistic** evidence that our brains respond differently to words from different categories.

Lorraine Tyler and her colleagues used **functional magnetic resonance imaging (fMRI)** to measure blood flow to different regions of the brain. The idea behind fMRI is that brain activity consumes oxygen, and when a particular area of the brain is active, then more blood flows there to bring it more oxygen. The researchers asked people to do an easy task. They showed them lists of three words and asked them to decide if the third word, the one in all caps, was related to the first two. So in this example, *sparrows, thrushes, and wrens* are all kinds of birds, so the participants would respond Yes. In this next example, *hammer, wrench, banana*, the first two are tools but the third one is a fruit, so it’s not related to the first two, so the participants would answer No.

Some of the words in this task were nouns, like the lists we just saw, and some were verbs, like these ones: *eating, grazing, dining*. All of those words are related to eating, so the participant would decide Yes. This is a pretty simple task, but what the researchers

found in the fMRI was that there were several areas of the brain that showed greater blood flow for verbs than for nouns! Apparently, the brain was reacting differently to words from these two different syntactic categories, even though the task was the same for both categories.

We also see differences between nouns and verbs in the brains of people with **aphasia**. Aphasia is the name for any kind of language disorder that results from an injury to the brain, such as a stroke or a tumour. There are different kinds of aphasia that have different kinds of symptoms. Louise Zingeser and Rita Sloan Berndt found a **dissociation** between nouns and verbs in the speech of two different groups of people with aphasia.

The researchers asked their participants to do a few simple tasks. One was a picture naming tasks, where the researcher would show a line drawing and ask the participant to say what it was, like a *fish* or a *car*. In another task, they asked participants to describe how they would go about a particular action, such as making a birthday cake or attending a concert. And in the last task, they gave participants a picture book that depicted a well-known fairy tale but didn't have any words in it and asked them to tell the story. So from all these tasks, they had a good collection of each person's speech. For each person, they calculated the ratio of nouns to verbs.

It turns out that in people without any brain injury, the ratio of nouns to verbs is pretty close to one. That means there are about the same number of nouns as there are verbs in the average person's speech for these tasks. But for people with **agrammatic aphasia**, verbs are very difficult to produce. These people had more than twice as many nouns as verbs. And for people with **anomic aphasia**, nouns are quite difficult. This group of people had fewer nouns than verbs.

Aphasia researchers call this kind of pattern a **dissociation**. We say that nouns are verbs are dissociated from each other because it's possible to have verb production impaired while noun production is ok, or vice versa. This dissociation is consistent with the idea that verbs and nouns are processed differently in the brain.

So what does all this mean? We've seen that, in typical brains, a simple task with verbs involves greater brain activity than the same task with nouns. And in people with brain injuries, some people have an impairment of verbs but not nouns, while others have an impairment of nouns but not verbs.

All this suggests that our brains treat words differently depending on what category they're in. Or in other words, different syntactic categories exist not just in language, but also in the brain!

This page titled 7.7: Neurolinguistics- Syntactic Category Differences in the Brain is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

CHAPTER OVERVIEW

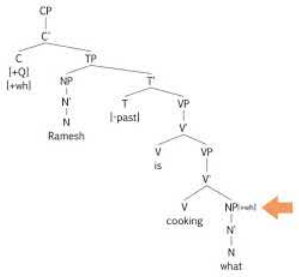
8: Sentence Structure and Meaning

8.1: Wh-Movement
8.2: Do-Support
8.3: Psycholinguistics- Traces in the Mind
8.4: Tree Diagrams
8.5: X-bar Phrase Structure
8.6: Constituents
8.7: Sentences are Phrases
8.8: English Verb Forms
8.9: Practice Time
8.10: Subcategories
8.11: Grammatical Roles
8.12: Summary
8.13: Adjuncts
8.14: Move

This page titled 8: Sentence Structure and Meaning is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

8.1: Wh-Movement

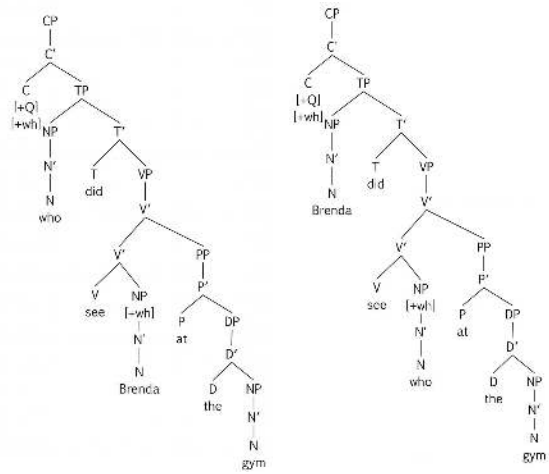
The last unit showed that the MOVE operation can move a head from its Deep Structure position to another position at Surface Structure. In this unit, we see that MOVE can take a wh-phrase from its Deep Structure position and move it to SpecCP at Surface Structure.



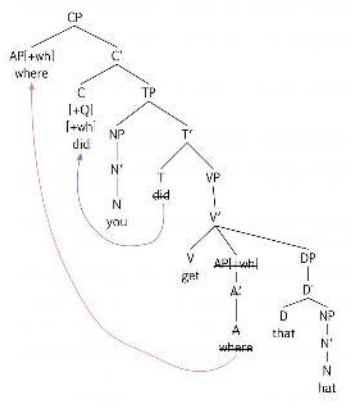
A YouTube element has been excluded from this version of the text. You can view it online here: ecampusontario.pressbooks.pub/essentialsoflinguistics/?p=184

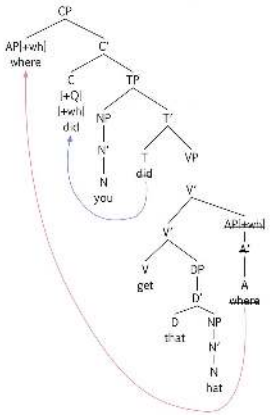
Check Yourself

1. Which tree diagram correctly represents the Deep Structure for the question, "*Who did Brenda see at the gym?*"

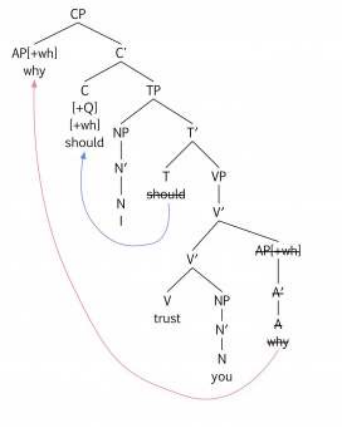


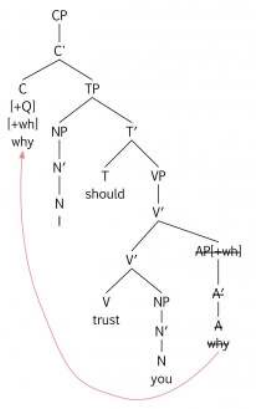
2. Which tree diagram correctly represents the Surface Structure for the question, "*Where did you get that hat?*"





3. Which tree diagram correctly represents the Surface Structure for the question, "*Why should I trust you?*"





Answers

This page titled 8.1: Wh-Movement is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

8.2: Do-Support

Forming Yes-No Questions

When we form a question that includes a modal auxiliary, the modal moves from the T-head position to the C-head position:

Could you could read this for me?

When a sentence contains no auxiliary, only a lexical verb, it appears that the lexical verb cannot move out of its V-head position. So we've proposed that the auxiliary *do* enters at the T-head position and then moves up to the C-head position:

***Did** you did see her tattoo?*

**Saw you saw her tattoo?*

One piece of evidence that *do* enters the sentence at the T-head position and moves to C-head, rather than just entering at the C-head position, is that it bears the tense feature of the sentence: if the tense is [+past], then we observe the form *did*, but if the tense feature is [-past], we observe the form *do* or *does*. Another piece of evidence is that whatever verb follows the inserted *do* is in its bare form, not its [-past] or [+past] forms:

***Did** she talk to Darren?*

**Did she talks to Darren?*

**Did she talked to Darren?*

***Does** she speak Italian?*

**Does she speaks Italian?*

**Does she spoke Italian?*

Both of these observations suggest that the inserted *do* gets its tense morphology from the tense feature (either [+past] or [-past]) in the T-head.

Negation

English also uses *do*-support to form negated sentences, which follow the same pattern: sentences with modals don't need *do*, but sentences with lexical verbs and no auxiliaries do need *do*:

I could not believe that rumour.

I **did not could believe that rumour.*

**She speaks not Italian.*

*She **does** not speak Italian.*

If we accept that *not* is in a fixed position between T-head and its VP-complement, then the distribution of *do* makes sense. Just like in questions, the evidence suggests that lexical verbs cannot move out of their V-head position up to the T-head position.

Non-modal auxiliaries

This pattern of how *do* behaves in questions and negative sentences gives us a clue about how the other non-modal auxiliaries, *have* and *be*, behave.

Notice that the verb *be* can always move up to C-head in questions, both when it's a genuine auxiliary:

Are you are going to the concert?

Was she was joking about that?

And when it's the only verb in the sentence:

Are you are serious?

Is this is the place?

Likewise, *be* appears before *not* both when it's an auxiliary and when it's the only verb:

You are not are going to the concert.

She was not was joking about that.

You are not are serious.

This is not is the place.

But *have* seems to have two different patterns of behaviour. When it is a genuine auxiliary, it behaves like *be*. It can move up to C-head in questions:

Have they have moved to Texas already?

Had she had already heard the news?

And appears before *not* in negated sentences:

They have not have moved to Texas already.

She had not had already heard the news.

But when *have* is the only verb in the sentence, it behaves like a lexical verb. It can't move up to C-head and can't appear before *not*.

**Has she has five sisters?*

**Have you have a headache?*

**She has not has five sisters.*

**You have not have a headache.*

Instead, when have is behaving like a lexical verb, it needs *do-support*.

Does she have five sisters?

Do you have a headache?

She **does** not have five sisters.

You **do** not have a headache.

The Deep Structures

From all of this evidence, we can conclude that MERGE treats these three kinds of heads differently:

Modals are generated in T-head, from where they can move to C-head if necessary to support a [+Q] feature.

Be is generated in V-head, but moves up to T-head (to the left of *not*) and from there up to C-head if necessary

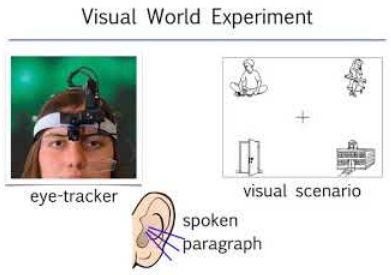
Have is generated in V-head, and can move up to T-head and from there up to C- head only if it is an auxiliary (that is, only if it has a VP complement). But if it is the only verb in the sentence (and has no VP complement), then it behaves like a lexical verb.

Lexical verbs in English are generated in V-head and cannot move to T-head or C-head.

This page titled 8.2: Do-Support is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

8.3: Psycholinguistics- Traces in the Mind

We've claimed that when the operation MOVE moves a head or a phrase into a new Surface Structure position, it leaves a silent copy of itself (a trace) behind in the Deep Structure position. This unit presents psycholinguistic evidence that these traces do form part of our mental representation of sentences.



A YouTube element has been excluded from this version of the text. You can view it online here: ecampusontario.pressbooks.pub/essentialsoflinguistics/?p=188

Check Yourself

1. Which of the following illustrates the position of the trace in the wh-question *What did Christina order at Chipotle?*

- What did Christina order at Chipotle what.
- What did Christina order what at Chipotle.

2. Which of the following ungrammatical sentences gives evidence that unpronounced traces exist in our mental representations of sentences?

- *Did you ate what for lunch?
- *What did you eat sandwiches for lunch?

3. Predict which sentence would lead to more eye movements to a picture of a rabbit after the verb *chase*:

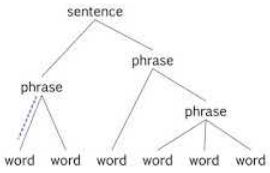
- What did the fox chase ^ into the hedge?
- Did the fox chase ^ the rabbit into the hedge?

Answers

This page titled 8.3: Psycholinguistics- Traces in the Mind is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

8.4: Tree Diagrams

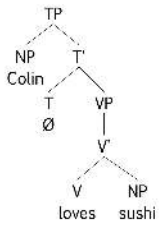
This unit introduces the basic vocabulary for tree diagrams. Tree diagrams are the notation that most syntacticians use to describe how sentences are organized in the mental grammar.



A YouTube element has been excluded from this version of the text. You can view it online here: ecampusontario.pressbooks.pub/essentialsoflinguistics/?p=146

Check Yourself

In the following tree diagram:



1. What is the structural relationship between V *loves* and NP *sushi*?

- V and NP are sisters.
- V is the mother of NP.
- V is the daughter of NP.
- V and NP are not related in any of these three ways.

2. What is the structural relationship between NP *Colin* and V *loves*?

- Deg and V are sisters.
- Deg is the mother of V.
- Deg is the daughter of V.
- NP and V are not related in any of these three ways.

3. Which node is the sister of NP *Colin*?

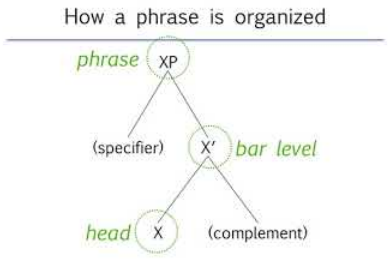
- TP.
- T'.
- T.

Answers

This page titled 8.4: Tree Diagrams is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

8.5: X-bar Phrase Structure

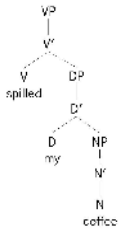
X-bar theory makes the simple proposal that every phrase in every sentence in every language is organized the same way. Every phrase has a head, and each phrase might contain other phrases in the complement or specifier position.



A YouTube element has been excluded from this version of the text. You can view it online here: https://ecampusontario.pressbooks.pub/essentialsoflinguistics/?p=150

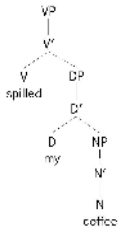
Check Yourself

1. In this tree diagram, what position does the DP *my coffee* occupy?



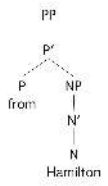
- Head.
- Specifier.
- Complement.

2. In this tree diagram, what position does the D *my* occupy?



- Head.
- Specifier.
- Complement.

3. In this tree diagram, what position does the NP *Hamilton* occupy?



- Head.
- Specifier.
- Complement.

Answers

This page titled 8.5: X-bar Phrase Structure is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

8.6: Constituents

We've started to use tree diagrams to represent how phrases are organized in our mental grammar. And we're using the tree diagram notation to represent every single phrase as having X-bar structure. But so far I've just asked you to believe me about X-bar structure: I've told you that this is what the theory claims, but we haven't yet talked about any evidence that our mental grammar really is organized into phrases that have X-bar structure. This unit shows some of the linguistic evidence that phrases have some reality in the mental grammar.

When we draw a tree diagram, we're making a claim about how a sentence or phrase is organized in our mind. Every time we draw two or more branches coming together at a node, we're making the claim that the node corresponds to a unit. In other words, all the daughters of that node behave together as a unit. Some of these nodes are at the phrase level, and some of them are at the bar-level. The more generic term for a group of words that act together to form a unit is a **constituent**.

So what's our evidence that constituents exist in our minds? Within a given sentence, how can we tell if a given string of words acts as a unit? Here again is where we rely on observing our grammaticality judgments, using a few simple tools.

Replacement Test

Here's a simple sentence:

> The students saw their friends after class.

Let's consider the string of words *their friends*. Because you've already started to practice drawing trees, you probably have an instinct that this is a noun phrase. But if you're going to claim that it's a constituent, it would be nice to have some evidence for that claim. One piece of evidence is that we can replace this set of words. Take the pronoun *them* and replace the string of words we're investigating:

> The students saw their friends after class.

> The students saw them after class.

Then we ask ourselves whether the resulting sentence is grammatical. Replacing *their friends* with *them* does indeed leave us with a grammatical sentence, which is one piece of evidence that *their friends* is a constituent.

Let's test another chunk of this sentence. Let's try the string of words *after class*. If we replace that set of words with the word *then*:

> The students saw their friends after class.

> The students saw their friends then.

And when we observe our grammaticality judgment, it turns out that this replacement is also grammatical. That's some evidence that words *after class* behave together as a constituent in this sentence.

We can do the same thing with the string *the students*. Replace that string with the pronoun *they*:

> The students saw their friends after class.

> They saw their friends after class.

And observe our grammaticality judgment, and we find evidence that the students is a constituent as well.

What happens if we try to replace a string of words that isn't a constituent?

> The students saw their friends after class.

> *The they friends after class.

> *The did friends after class.

> *The then friends after class.

> *The them friends after class.

We can try lots of replacements, but when we ask ourselves whether the result is grammatical, the answer is No. There doesn't seem to be anything that can replace the string of words *students saw their*. The fact that nothing can replace that string of words

suggests that *students saw their* is not a constituent in this sentence.

At this point, you're probably wondering how you know what you can use as a replacement. Here are some handy tips:

- Noun Phrases can be replaced with Pronouns (*it*, *them*, *they*).
- Verb Phrases can be replaced with *do* or *do so* (or *did*, *does*, *doing*).
- Some Preposition Phrases (but not all) can be replaced with *then* or *there*.
- Adjective Phrases can be replaced with something that you know to be an adjective, such as *happy*.

Let's see how this replacement tool works for a verb phrase. We'll go back to our sentence and look for the verb, *saw*. Let's test this set of words: *saw their friends*. Since *saw* is the past tense of *see*, we'll try replacing it with *did*, the past tense of *do*, and observe our grammaticality judgment.

> The students saw their friends after class.
> The students did after class.

This replacement is grammatical, so that provides us with some evidence that the set of words *saw their friends* is indeed a constituent.

You can use this evidence as you're drawing trees. If you can't quite figure out which groups of words go together into certain phrases, you can try replacing different chunks of the sentence. The parts that allow themselves to be replaced, that is, the parts that can be replaced and still leave a grammatical sentence are constituents, and those parts will be joined under one node.

You can also use this evidence when you're trying to figure out what category a certain phrase is: If you can replace it with a pronoun, then you've got a noun phrase and you can look for the noun as the head. If you can replace it with *do* or *do so*, then you've got a verb phrase which will have a verb as its head. *Then* and *there* are a little less reliable because they sometimes replace PPs or APs, but you'll be able to tell the difference between prepositions and adjectives because prepositions usually have complements and adjectives don't.

Movement Test

Replacement is not the only tool we have for checking if a set of words is a constituent. Some constituents can be moved to somewhere else in the sentence without changing its meaning or its grammaticality. Preposition Phrases are especially good at being moved. Look at this sentence:

> Nimra bought a top from that strange little shop.

Let's start by targeting the last string of words by moving it to the beginning. Move the string of words then ask yourself whether the resulting sentence is grammatical.

> Nimra bought a top from that strange little shop.
>
> From that strange little shop Nimra bought a top.

Yes, it is. Standing here in isolation, the sentence might sound a little unnatural, but we can imagine a context where it would be fine, such as, "At the department store, she bought socks, at the pharmacy she bought some toothpaste, and at that strange little shop, she bought a top." On the other hand, if we target a smaller string of words:

> Nimra bought a top from that strange little shop.
>
> *From that strange, Nimra bought a top little shop.

If we try to move that string to the beginning of the sentence, the result is a total disaster. The fact that the resulting sentence is totally ungrammatical gives us evidence that the string of words *from that strange* is not a constituent in this sentence.

Cleft Test

There's a version of the movement tool that can be useful for other kinds of phrases. It's called Clefting. A cleft is a kind of sentence that has the form:

> It was ____ that …

To use the cleft test, we take the string of words that we're investigating and put it after the words *It was*, then leave the remaining parts of the sentence to follow the word *that*. Let's try it for the phrases we've already shown to be constituents.

Nimra bought a top from that strange little shop.

It was from that strange little shop that Nimra bought a top.

The students saw their friends after class.

It was their friends that the students saw after class.

It was after class that the students saw their friends.

And let's try the cleft test on another new sentence.

Rhea's sister baked these delicious cookies.

It was these delicious cookies that Rhea's sister baked.

It was Rhea's sister that baked these delicious cookies.

The cleft test shows us that the string of words *these delicious cookies* are a constituent, and that the words *Rhea's sister* are a constituent. But look what happens if we apply the cleft test to another string of words:

Rhea's sister baked these delicious cookies.

*It was sister baked that Rhea's these delicious cookies.

Rhea's sister baked these delicious cookies.

*It was these delicious that Rhea's sister baked cookies.

Rhea's sister baked these delicious cookies.

*It was cookies that Rhea's sister baked these delicious.

All of these applications of the cleft test result in totally ungrammatical sentences, which gives us evidence that those underlined strings of words are not constituents in this sentence.

Answers to Questions

If a string of words is a constituent, it's usually grammatical for it to stand alone as the answer to a question based on the sentence.

Rhea's sister baked these delicious cookies.

What did Rhea's sister bake? These delicious cookies.

Who baked these delicious cookies? Rhea's sister.

The answer-to-questions test can also help us identify a verb phrase using *do*-replacement:

Who baked these delicious cookies? Rhea's sister did.

Notice that in the answer, "Rhea's sister did", the word *did* automatically replaces the verb phrase *baked these delicious cookies*.

Again, if a string of words is not a constituent, then it is unlikely to be grammatical as the answer to a question. In fact, it's difficult to even form the right kind of question:

What did Rhea's sister bake cookies? *these delicious

Who of Rhea's these delicious cookies? *sister baked

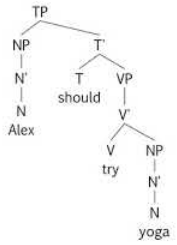
Remember that tree diagrams are a notation that linguists use to depict how phrases and sentences are organized in our mental grammar. We can't observe mental grammar, so observing how words behave is how we make inferences about the mental grammar. These four tests are tools that we have for observing how words behave in sentences. If we discover a string of words that passes these tests, then we know that the phrase is a constituent, and therefore there should be one node that is the mother to that entire string of words in our tree diagram.

Not every constituent will pass every test, but if you've found that it passes two of the four tests, then you can be confident that the string is actually a constituent. When you're drawing trees, use these tests as a check every time you draw a mother node.

This page titled 8.6: Constituents is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

8.7: Sentences are Phrases

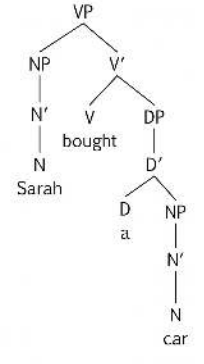
If every phrase in every language is organized into an X-bar structure, then sentences must also have X-bar structure. This unit shows that every sentence has a Tense node (T) and every sentence is a TP.

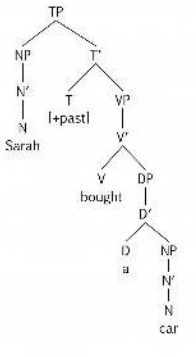


A YouTube element has been excluded from this version of the text. You can view it online here: ecampusontario.pressbooks.pub/essentialsoflinguistics/?p=160

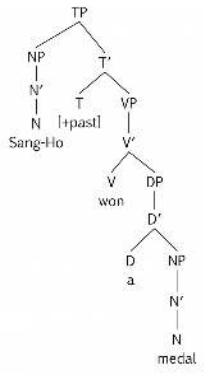
Check Yourself

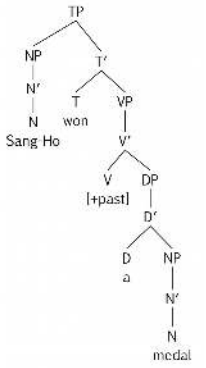
1. Which of the following is the correct representation for the sentence, *Sara bought a car*?



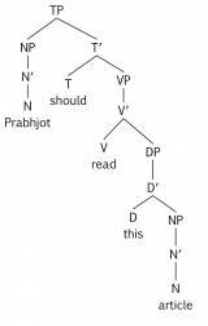


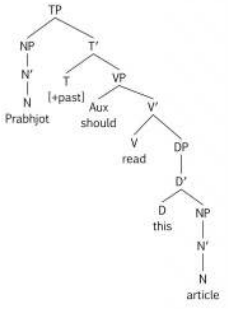
2. Which of the following is the correct representation for the sentence, *Sang-Ho won a medal*?





3. Which of the following is the correct representation for the sentence, *Prabhjot should read this article*?





Answers

This page titled 8.7: Sentences are Phrases is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

8.8: English Verb Forms

Every English verb has five different forms, but only two of the forms have a tense feature. The tensed forms are indicated with a morphosyntactic feature, either [+past] or [-past]. The form that a verb in the V-head position takes depends on what tense feature is in the T-head position, among other things.

bare	(non-tensed)	eat	walk	sing	take
[-past]	(tensed)	eats	walks	sings	takes
[+past]	(tensed)	ate	walked	sang	took
past participle	(non-tensed)	eaten	walked	sung	taken
present participle	(non-tensed)	eating	walking	singing	taking

But there are some quirks of English that can make things confusing:

Is it bare or [-past]?

For just about every verb, the [-past] form is recognizable in the 3rd-person-singular form (*she eats/walks/sings/takes*). The 1st & 2nd-person forms (*I eat/walk/sing/take* and *You eat/walk/sing/take*) look just like the bare form (*eat/walk/sing/take*).

If you're looking at a verb and can't tell if it's in the bare form or the [-past] form, give it a 3rd-person subject and then look for the *–s* morpheme:

> I want to visit Saskatoon. (bare or [-past]? Can't tell: they're ambiguous)
>
> She wants to visit Saskatoon. (*wants* is [-past], *visit* is bare)

Is it [+past] or past participle?

For many English verbs, the [+past] form (*She bought a donut*) and the past participle form (*She has bought a donut*) are the same.

If you're looking at a verb and can't tell if it's in the [+past] form or the past participle form, try replacing it with the verb *eat*:

> *She bought a donut after she had walked the dog.* ([+past] or past participle? Can't tell: they're ambiguous)
>
> *She ate a donut after she had eaten the dog.* (Silly, but grammatical)

The form *ate* is [+past], while *eaten* is past participle, so we can conclude that, in that sentence, *bought* is [+past] while *walked* is the past participle)

What about auxiliaries?

The modal auxiliaries never change their form: they occupy the T-head position in their own right.

The non-modal auxiliaries, like main verbs, change their form depending on what tense feature is in the T-head position, among other things.

bare	(non-tensed)	be	have	do
[-past]	(tensed)	am/are/is	has	does
[+past]	(tensed)	was/were	had	did
past participle	(non-tensed)	been	had	done
present participle	(non-tensed)	being	having	doing

This page titled 8.8: English Verb Forms is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

8.9: Practice Time

Exercise 1. Groucho Marx has famously joked, “One morning I shot an elephant in my pyjamas. How he got in my pyjamas I don’t know.” Draw the two tree diagrams that correspond to the two separate meanings of the sentence, “*I shot an elephant in my pyjamas*.”

Exercise 2. The following sentences are taken from The Venturesome Voyages of Captain Voss, by John Claus Voss, which is in the Public Domain in Canada. For each sentence, identify the thematic role of each NP.

Because I had found, from the day I first met Dempster on Cocos Island till he died, that he was a straightforward and reliable man, I have decided to place confidence in you. I now ask, can you and will you procure for me a vessel and fit her out properly, sail with me to Cocos Island and assist me to put the treasure on board and take it to Victoria?

The wind freshened considerably and hauled round to the west, at the same time throwing up a lively choppy sea, which made the little vessel jump about worse than a bucking horse.

All three ships under full sail passed Cape Flattery towards evening, shaping their courses toward the south-west with a fresh easterly breeze.

Exercise 3. The following paragraph is taken from Swiss Sonata by Gwethalyn Graham, which is in the Public Domain in Canada. The verb component of several clauses has been underlined. For each underlined set of verbs, say whether it is passive or active.

Her eyes reached Miss Ellerton, the games mistress, who, after a few impatient glances in Mlle Tourain’s direction, had got up from her chair and wandered over to the french windows where she was standing now, holding the curtain back with one hand and looking over the lovely grey town where dusk already lurked here and there. Some of the light which yet remained in the outer world was caught in her hair and outlined her small features so that the others, sitting patiently in their chairs, were aged by their contrasting dullness. Amélie Tourain leaned forward a little and switched on her desk light, then remained motionless looking at the girl by the window. An unaccountable conviction that Miss Ellerton was in some way connected with the turmoil in her mind had complete possession of her.

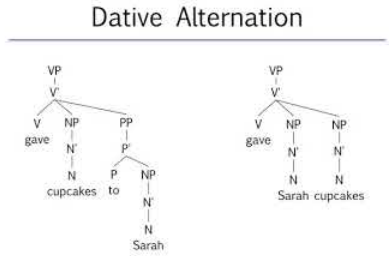
Exercise 3. Think about your experience of learning an L2. What parts of your L1 grammar led to a positive transfer to your L2? What parts of your L1 created a negative transfer to your L2? Consider phonetics and phonology as well as morphology and syntax.

This page titled 8.9: Practice Time is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

8.10: Subcategories

We saw in Chapter 7 that we can group words into categories according to their behaviour. In this unit, we see that we can divide up the category of Verbs into **subcategories** according to what kind of complement a verb takes.

[redacted]



[redacted]

A YouTube element has been excluded from this version of the text. You can view it online here: ecampusontario.pressbooks.pub/essentialsoflinguistics/?p=164

Check Yourself

1. What is the subcategory of the underlined verb in this sentence?

The soccer players kicked the ball.

- Intransitive.
- Transitive.
- Ditransitive.
- Verb with a complement clause.

2. What is the subcategory of the underlined verb in this sentence?

Many birds fly over Ontario each fall.

- Intransitive.
- Transitive.
- Ditransitive.
- Verb with a complement clause.

3. What is the subcategory of the underlined verb in this sentence?

This game teaches children the alphabet.

- Intransitive.
- Transitive.
- Ditransitive.
- Verb with a complement clause.

Answers

This page titled 8.10: Subcategories is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

8.11: Grammatical Roles

We use **grammatical role** labels to identify the syntactic position of Noun Phrases within each clause. It's vital to remember that grammatical role labels are defined strictly according to syntactic positions, not according to the meaning of a noun phrase or its semantic relationship to the verb. We'll come back to this idea in the next chapter.

The **subject** NP is the NP that appears in the Specifier of TP. The underlined phrases in the following sentences are all subjects of their respective clauses.

Zora kicked the soccer ball.

Yasmin guessed that Xavier would probably be late.

That tall woman nearly knocked me over.

The view from the top floor is quite impressive.

Understanding Calculus takes a lot of work.

The town where I was born recently elected a new mayor.

The **direct object** NP is the complement to a Verb head. Each of the following underlined phrases is a direct object.

Zora kicked the soccer ball.

Xavier's lateness annoyed Yasmin.

William convinced Veronica that class was cancelled.

Ursula asked the fellow who works at Tim Horton's what time the store closed.

Stefanie bought a gift certificate for $100 for her mother.

If we refer to an NP simply as *the object*, by default we mean the direct object, not the indirect object (see below).

If a Verb head takes a complement that is some category other than an NP, then that complement phrase does not count as a direct object. The phrases following the verbs in these sentences are NOT direct objects, even though they are complements to V-head, because they are not NPs.

Yasmin guessed Xavier would be late.

Rana seemed unhappy.

The parcel was on the porch.

We can identify two additional grammatical roles for NPs, according to the syntactic positions they occupy. An **indirect object** only appears with a ditransitive verb. It is the NP that alternates between being the complement of a P-head and the complement of a V-head, for a verb that allows the dative alternation. The underlined phrases below are all indirect objects:

Stefanie bought a gift certificate *for*her mother.

Stefanie bought her mother a gift certificate.

Quinn texted directions to the party *to* her friends.

Quinn texted her friends directions to the party.

Preeti sent a bouquet of flowers *to* her aunt.

Preeti sent her aunt a bouquet of flowers.

If a verb does not allow the dative alternation, then it does not have an indirect object.

If an NP appears as the complement to a preposition, but does not an alternate position to become the complement of a verb in the dative alternation, then it is not an indirect object, but an **oblique**. Oblique is the catch-all label for all other positions that NPs can occupy in a sentence. The underlined phrases below are all obliques:

Oscar bought a bicycle from that store on Locke Street.

Norma left her business card on the table.

Massimo watched a documentary about antibiotics.

These four labels: subject, direct object, indirect object, and oblique, describe Noun Phrases only in terms of what position they occupy in a clause. Look at the following two sentences:

A famous food critic reviewed this restaurant.

This restaurant was reviewed by a famous food critic.

Even though the person who does the reviewing is the same person (the famous food critic) in both sentences, the NP a *famous food critic* is not the subject of both sentences, only of the first. The subject of the second sentence is the NP *this restaurant*. Grammatical role labels describe the syntactic position of noun phrases.

This page titled 8.11: Grammatical Roles is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

8.12: Summary

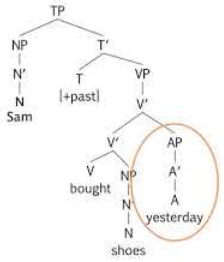
The crucial idea in this chapter is the idea of **compositionality**: the syntactic structures that our mind uses to combine words play a vital role in the meaning of sentences. If a sentence has more than one grammatical tree structure, then it will be ambiguous. We also learned in this chapter that there are components of semantics that are not dependent on syntax. Linguists use thematic role labels to capture the semantic properties of participants in events, independent of the grammatical roles of the NPs. And while most languages have a typical mapping between the grammatical role of subject and the thematic role of agent, this is not the only possible mapping, and languages all have ways of overriding that mapping. Evidence from neurolinguistics suggests that syntax and semantics are processed differently in the brain, both in native speakers and in L2 learners.

This page titled 8.12: Summary is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

8.13: Adjuncts

We know that each phrase contains a head, and might contain other phrases in the complement or specifier position. This unit introduces a new position in the phrase, the adjunct position. The adjunct position often contains phrases that communicate optional information, like where, when or why an event happens.

[redacted]



[redacted]

A YouTube element has been excluded from this version of the text. You can view it online here: https://ecampusontario.pressbooks.pub/essentialsoflinguistics/?p=168

Check Yourself

1. Is the underlined phrase an adjunct or a complement?

Sam ran the Around-the-Bay race.

- Adjunct.
- Complement.

2. Is the underlined phrase an adjunct or a complement?

Sam ran this morning.

- Adjunct.
- Complement.

3. Is the underlined phrase an adjunct or a complement?

The baby slept through the night.

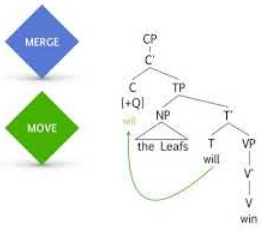
- Adjunct.
- Complement.

Answers

This page titled 8.13: Adjuncts is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

8.14: Move

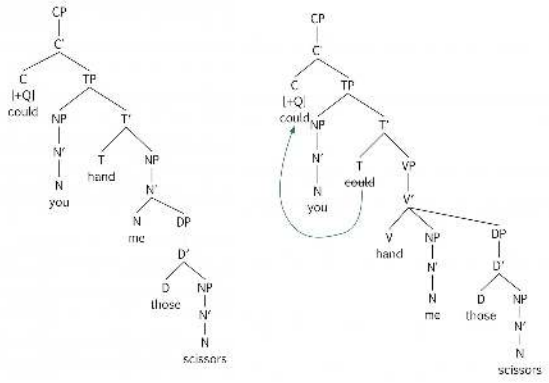
The operation MERGE takes words, morphemes and features from the mental lexicon and combines them into grammatical x-bar structures. But in some sentences, a further operation is required to make the sentence pronounceable. This unit shows that a head that is generated in one position by MERGE can be moved to an adjacent head position by the operation MOVE.



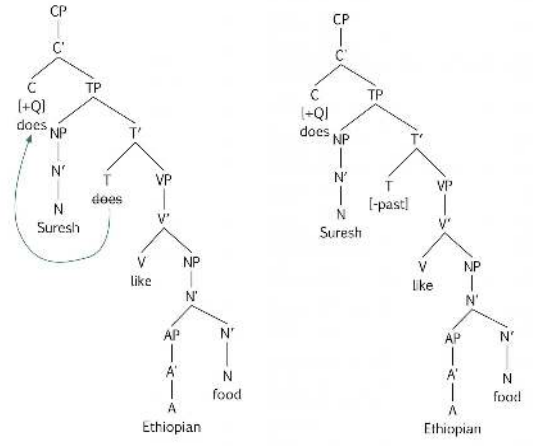
A YouTube element has been excluded from this version of the text. You can view it online here: ecampusontario.pressbooks.pub/essentialsoflinguistics/?p=176

Check Yourself

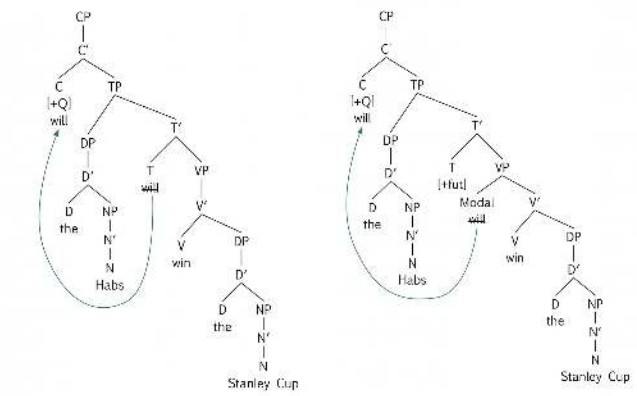
1. Which tree diagram correctly represents the question, "*Could you hand me those scissors*?"



2. Which tree diagram correctly represents the question, "*Does Suresh like Ethiopian food?*"



3. Which tree diagram correctly represents the question, "*Will the Habs win the Stanley Cup?*"



Answers

This page titled 8.14: Move is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

CHAPTER OVERVIEW

9: Word Meanings

9.1: Ambiguity

9.2: Events, Participants, and Thematic Roles

9.3: Thematic Roles and Passive Sentences

9.4: Neurolinguistics- Using EEG to Investigate Syntax and Semantics

9.5: Practice Time

9.6: Neurolinguistics and Second Language Learning

9.7: Summary

This page titled 9: Word Meanings is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

9.1: Ambiguity

In Chapter 8, as we learned to draw tree diagrams to illustrate how sentences are represented in the human mind, we thought about Deep Structure as the place where meaning is assigned and calculated. For example, in a question sentence like, "*What are the kids eating for lunch?*", we claim that the word *what* is related to the verb eating in the same way that *eggs* and *eating* are related in the declarative sentence, "*The kids are eating eggs for lunch*." The relationship between *eating/eggs* and between *eating/what* arises at Deep Structure, where *eggs* and *what* are both in the complement of the verb. In our theory, a sentence's meaning is correlated directly with the sentence's syntax.

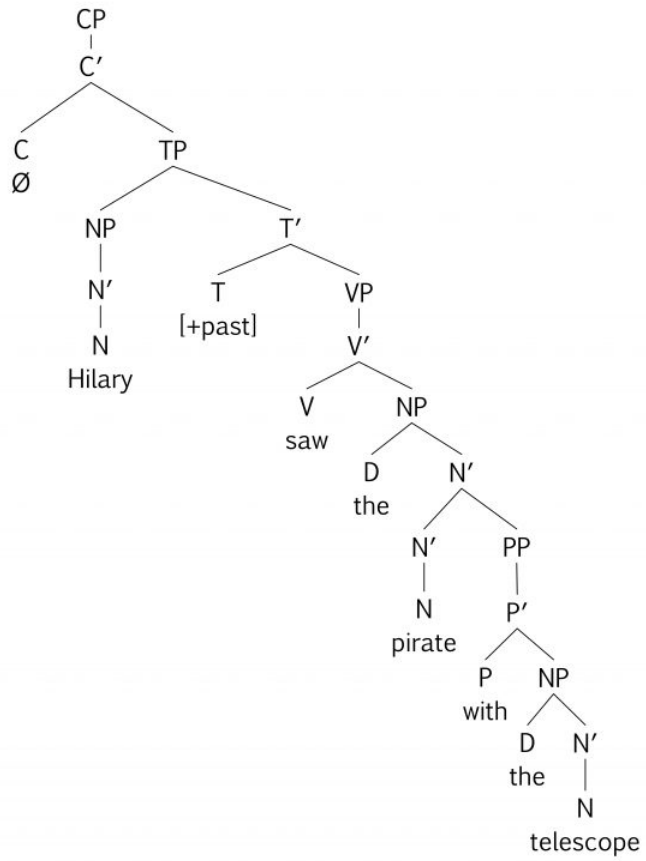
This idea is a core one in linguistics: the meaning of some combination or words (that is, of a compound, a phrase or a sentence) arises not just from the meanings of the words themselves, but also from the way those words are combined. This idea is known as **compositionality**: meaning is composed from word meanings plus morphosyntactic structures.

If structure gives rise to meaning, then it follows that different ways of combining words will lead to different meanings. When a word, phrase, or sentence has more than one meaning, it is **ambiguous**. The word *ambiguous* is another of those words that has a specific meaning in linguistics: it doesn't just mean that a sentence's meaning is vague or unclear. *Ambiguous* means that there are two or more distinct meanings available.

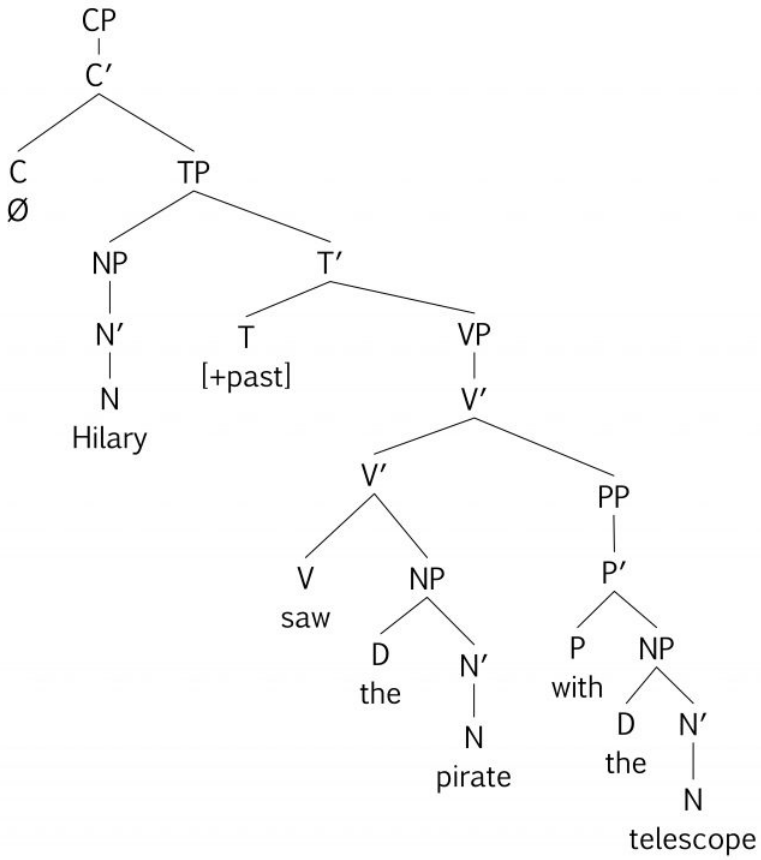
In some sentences, ambiguity arises from the possibility of more than one grammatical syntactic representation for the sentence. Think about this example:

Hilary saw the pirate with the telescope.

There are at least two potential locations that the PP *with the telescope* could be adjoined. If the PP is adjoined to the N-bar headed by *pirate*, then it's part of the NP. (Notice that the whole NP *the pirate with the telescope* could be replaced by the pronoun *her*.) In this scenario, the pirate is holding a telescope, and Hilary sees that pirate.



But if the PP is adjoined to the V-bar headed by *saw*, then the NP *the pirate* is its own constituent, and *with the telescope* gives information about how the pirate-seeing event happened. In this scenario, Hilary is using the telescope to see the pirate.



This single string of words has two distinct meanings, which arise from two different grammatical ways of combining the words in the sentence. This is known as **structural ambiguity** or **syntactic ambiguity**.

Structural ambiguity can sometimes lead to some funny interpretations. This often happens in news headlines, where function words get omitted. For example, in December 2017, several news outlets reported, “Lindsay Lohan bitten by snake on holiday in Thailand”, which led a few commentators to express surprise that snakes take holidays.

Another source of ambiguity in English comes not from the syntactic possibilities for combining words, but from the words themselves. If a word has more than one distinct meaning, then using that word in a sentence can lead to **lexical ambiguity**. In this sentence:

Heike recognized it by its unusual bark.

It’s not clear whether Heike recognizes a tree by the look of the bark on its trunk, or if she recognizes a dog by the sound of its barking. In many cases, the word *bark* would be disambiguated by the surrounding context, but in the absence of contextual information, the sentence is ambiguous.

This page titled 9.1: Ambiguity is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

9.2: Events, Participants, and Thematic Roles

Unlike grammatical roles, which label the syntactic position of noun phrases in a sentence, thematic role labels capture semantic similarities across the participants in events.



A YouTube element has been excluded from this version of the text. You can view it online here: https://ecampusontario.pressbooks.pub/essentialsoflinguistics/?p=199

Check Yourself

1. What label best describes the thematic role of the underlined NP?

The guard chased the intruder.

- Agent.
- Theme.
- Cause.
- Instrument.
- Location.
- Experiencer.

2. What label best describes the thematic role of the underlined NP?

The wind slammed the door shut.

- Agent.
- Theme.
- Cause.
- Instrument.
- Location.
- Experiencer.

3. What label best describes the thematic role of the underlined NP?

The guard followed the intruder.

- Agent.
- Theme.
- Cause.
- Instrument.
- Location.
- Experiencer.

Answers

Video Script

We've spent a lot of time thinking about the structure of sentences. We're now turning our attention to what sentences mean. Sentences usually describe events or states in the world. And events usually have participants: the people or things that play a role in the event. Usually, noun phrases are used to refer to the participants in an event. It turns out that, even across events that are quite different from each other, some participants share some elements of meaning.

Take a look at the underlined phrases in each of these sentences.

> Mina tore the wrapping paper.
>
> Sam ran a marathon.
>
> The students studied for their exam.
>
> Neeraja waited for the bus.
>
> Carlos ate the rice.

We can see that the grammatical role of each of these is a subject: They're all in the specifier of TP. Semantically, the events that each sentence describes are quite different: tearing is different from running which is different from studying or waiting or eating. But even across these different events, the participants described by the underlined noun phrases all share some semantic similarities: all of them choose to take part in the event, all of them are causing the event to happen. Let's look at another few sentences.

> Mina tore the wrapping paper.
>
> A nail tore her skirt.
>
> The fabric tore.

All of these sentences have the same verb and they all describe a tearing event. And all the underlined phrases have the grammatical role of subject, but they don't share the same semantic properties. In the first sentence, Mina is the one who causes the tearing event to happen: you can imagine her gleefully tearing the paper open to see what's inside. In the second sentence, the nail is sort of responsible for the tearing, but it certainly doesn't choose to make it happen. And in the third sentence, the fabric is the thing that the tearing happens to, not the participant that makes the tearing happen. So even though all three of these NPs are subjects, they don't all share semantic properties.

Remember that we use grammatical roles to label the syntactic position of a noun phrase in a sentence. We're now going to introduce a new kind of label, called **thematic roles**. We can use thematic roles to identify common semantic properties of the participants in events. An important thing to notice about thematic roles is that they are independent of grammatical roles. In this pair of sentences,

> Kavitha cooked this lovely meal.
>
> This lovely meal was cooked by Kavitha.

the grammatical role for *Kavitha* is different: *Kavitha* is the subject of one sentence but an oblique in the other. But semantically, Kavitha's role in the cooking event is the same in both sentences. We say that Kavitha's thematic role is the **agent**.

The kinds of participants that we label as agents tend to have three properties: usually, they are **volitional**, meaning they choose to participate in the event. They're **sentient**, that is, they're aware of the event, and often they're the ones that bring the event about or **cause** it to take place. Let's look back at that tearing event.

> Mina tore the paper.
>
> The paper tore.

Again in these sentences, *the paper* has two different grammatical roles: it's the direct object in the first sentence but the subject of the second, but semantically its role as a participant in the tearing event is the same in both: it's the thing that the tearing happens to. Its thematic role is called a **theme**, or in some books, you'll see it called a **patient**. Theme participants typically **undergo** events, that is, events happen to them. They're **affected** by events, and often they **change state** or **position** as a result of an event.

Take a minute and try to think of some sentences that describe events that have agent and theme participants. They're probably the two most common thematic role labels, and in fact, one theory of semantics says that every participant is either an Agents or Themes, just to a greater or lesser degree. But it can also be useful to have labels for some other kinds of participants, and the grammars of many languages encode other semantic properties besides those two.

Some languages make a morphological distinction between an animate agent and an inanimate **cause**. In a sentence like, *The hurricane destroyed the houses*., the hurricane is clearly responsible for the destroying event, but it's not sentient or volitional — the hurricane isn't choosing to bring about the destroying. Likewise, in *The movie frightened the children*, the movie isn't really a typical agent. We label these inanimate participants with the label **cause** A cause participant shares the agentive property of causing an event to happen, but it's not aware of the event and doesn't choose to cause it, because the cause is inanimate.

In this sentence, *The knife cut the bread*, would you say that the knife is a cause participant? Certainly, the knife is inanimate, and it's not aware of the cutting event, but it's also not really causing the cutting to happen, is it? There's some unnamed agent who must be using the knife to cut the bread. We could label *the knife* as an **instrument**. An instrument is the participant that an agent uses to make an event happen.

Many languages have special morphology to indicate the **location** of an event, like in these sentences:

> The Habs won the game at the Forum.
>
> The kids ran through the sprinkler on the lawn.
>
> The parade travelled around the neighbourhood.

The noun phrases the *forum*, the *lawn* and the *neighbourhood* all have the thematic role of **location**.

So we've got labels like **cause**, **instrument**, and **location** to describe some of the roles that inanimate participants typically have in events. I want to return to animate participants to look at one more important role. Let's look at the human participants in these sentences:

> Phoebe tripped on the curb.
>
> Sun-Jin won the lottery.
>
> The movie frightened Farah.

If Phoebe tripped on the curb, it doesn't seem quite right to label *Phoebe* as an agent — presumably, she didn't choose to trip on the curb, even if she is aware of it, and she isn't really the cause of the tripping event; the curb is. And no matter how badly you might want to win the lottery, you can't really cause it to happen, so Sun-Jin isn't a great example of an agent either. Likewise, if we say that the movie frightened Farah, Farah isn't exactly a theme; yes, the frightening is happening to her, but she's not necessarily changed by it, and she is aware of the event.

Let's label these participants with the thematic role of the **experiencer**. Experiencers are like the middle ground between agents and themes. They are animate and sentient, so they're aware of events happening, but they don't necessarily choose or cause events to happen; events happen to them. Because experiencers have this in-between status, they can show up either as subjects or as objects, like in these examples:

> The children were scared of the clowns.
>
> The clowns frightened the children.

And we could say that Phoebe and Sun-Jin are experiencers of their tripping and winning events: they don't cause the events to happen, but they are aware of the events happening.

To sum up, thematic role labels capture the semantic properties of participants in events, independent of the syntactic position of the noun phrase. Just because something has the grammatical role of a subject doesn't mean it will necessarily have the thematic role of agent and vice versa. There's a fair amount of argument in the literature about exactly how many thematic role labels are necessary to capture the relevant patterns of behaviour in the languages of the world, with proposals ranging from two to about fifteen thematic roles. We'll settle on the middle ground and use six thematic role labels:

- Agent

- Theme
- Cause
- Instrument
- Location
- Experiencer

This page titled 9.2: Events, Participants, and Thematic Roles is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

9.3: Thematic Roles and Passive Sentences

Even though the subject of a sentence is often the agent, that's not always the case. In a passive sentence, the phrase that usually occupies the object position gets promoted to the subject position, while the subject phrase might become an oblique or might disappear altogether.



A YouTube element has been excluded from this version of the text. You can view it online here: ecampusontario.pressbooks.pub/essentialsoflinguistics/?p=201

Check Yourself

1. Is the following sentence in the active or passive voice?

The patient was diagnosed with alopecia.

- Active.
- Passive.

2. Is the following sentence in the active or passive voice?

Eileen was convinced that her appointment had been cancelled.

- Active.
- Passive.

3. Is the following sentence in the active or passive voice?

The children had been invited to a tea party.

- Active.
- Passive.

Answers

Video Script

Many sentences describe events that involve two participants: an agent and a theme. And it often happens that the agent role shows up in subject position and the theme role in object position. These sentences illustrate that common pattern: the subjects are all agents and the objects are all themes.

> Ilona broke an icicle.
>
> Zainab introduced the guest speaker.
>
> The manager fired the receptionist.

It's a common tendency across languages for the agent to occupy the subject position, but of course not all agents are subjects, and not all subjects are agents. These next sentences describe pretty much the same events as the last three, but the noun phrases in subject position are not agents.

The icicle broke.

The guest speaker was introduced by Zainab.

The receptionist got fired.

So while the usual pattern is for agents to be mapped onto subject position and themes onto object position, most languages also have a way of reversing that usual mapping. In English, the strategy we have involves both morphology and syntax and is called a **passive** structure. A passive sentence reverses the usual mapping between thematic roles and grammatical roles.

In this first sentence, *The police arrested the burglar*, the police are the agent and they're in subject position, and the burglar is the theme in direct object position.

In the second sentence, *The burglar was arrested by the police*, the semantic relationship of the police and the burglar to the arresting event is the same: the police are still the agent and the burglar is still the theme. But their grammatical roles are different. We can use this passive structure to reverse the usual pattern and focus our attention more on the theme than on the agent.

The reversal that happens in a passive sentence works the same even if the thematic roles aren't the classic agent and patient. Take a look at this pair of sentences,

The exhibit impressed the audience.

The audience was impressed by the exhibit.

In the first sentence, which is an active sentence, the usual mapping plays out not with an agent and theme, but with a cause participant in subject position and an experiencer in the object position. When we use a passive structure in the second sentence, the thematic roles of the participants don't change, but their grammatical roles do.

So how can you tell if a sentence is in the passive voice? It's easy: a passive sentence will always have some form of the verb *be*, followed by a past participle. All of these examples are passives.

The burglar was arrested.

The children were invited to the party.

This flight is expected to arrive on time.

The candidate is being prepared for the debate.

I am appalled by your behaviour.

But if you have the verb *be* plus a present participle, or if you have the verb *have* plus a past participle, then those aren't passives. All of these sentences are in the active voice:

The report is calling for changes.

The burglar was planning a heist.

The children were behaving poorly.

The hosts have invited several guests.

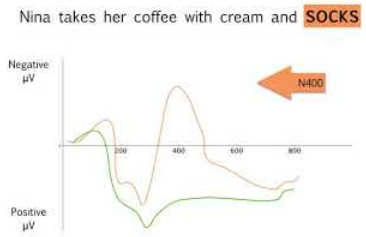
The dog had eaten all the Halloween candy.

A passive structure is a morphosyntactic strategy that English uses to reverse the usual mapping of thematic roles onto grammatical roles. Some languages accomplish this reversal with morphology on the verb or with morphology on the noun, but it's pretty common for a language to have a strategy in the morphology or syntax that has this effect in the semantics of a sentence.

This page titled 9.3: Thematic Roles and Passive Sentences is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

9.4: Neurolinguistics- Using EEG to Investigate Syntax and Semantics

By considering the difference between grammatical roles and thematic roles, we saw that the syntax and the semantics of sentences are represented differently from each other in our minds. We also have evidence from neural imaging that syntactic knowledge and semantic knowledge are processed differently in the brain.



A YouTube element has been excluded from this version of the text. You can view it online here: ecampusontario.pressbooks.pub/essentialsoflinguistics/?p=203

Check Yourself

1. What kind of ERP is likely to be observed in response to this sentence?

The children's feet have grown so I bought them some new spoons.

- N400.
- P600.

2. What kind of ERP is likely to be observed in response to this sentence?

Elias told the coach that he wanted to learn to swam.

- N400.
- P600.

3. What kind of ERP is likely to be observed in response to this sentence?

Before the dinner party, Isla spent a long time in the cooked.

- N400.
- P600.

Answers

Video Script

When we started talking about semantics, we observed that a sentence's syntax influences its semantics, because of the principle of **compositionality**. For example, we saw that a given string of words can have two different meanings if it has two different grammatical syntactic structures. And yet, we also observed that syntax is independent of syntax. A noun phrase that has the semantic thematic role of Agent often occupies the syntactic position of Subject, but not all Agents are Subjects, and not all Subjects are Agents!

The division of labour between thematic roles and grammatical roles is some evidence that syntax and semantics are represented differently in our minds. There's also evidence from **neural imaging** to show that our brains process semantic information differently from syntactic information. This evidence comes from **electroencephalography** or **EEG**. Electroencephalography uses electrodes to measure electrical activity on a person's scalp from which scientists can draw conclusions about the person's neural

activity. The particular EEG technique that gets used in neurolinguistics is **ERPs** or **event-related potentials**, which measure the timing of the neural response to a particular event, like a sound or a word.

When we're observing ERPs, we always do so by comparing responses to different kinds of events, and the usual comparison is between events that are expected and events that are unexpected. For example, a sentence like, "She takes her coffee with cream and …" sets up a very strong expectation in your mind of what the next word will be. If the next word that arrives in the sentence matches your mind's expectation, then the electrical response at your scalp will look something like this: the baseline condition. But if the next word that shows up violates your mind's expectation, then compare your brain's response: We observe a spike in negative voltage about 400 milliseconds after that unexpected word appears.

This response is called an **N400**. The N in N400 stands for a negative voltage, and the 400 indicates that this spike in negative voltage shows up, on average, about 400 milliseconds after the event. The N400 was first observed in 1980 by Kutas & Hillyard and has been replicated hundreds of times since then. It's clear from all these studies that the particular kind of event that leads to an N400 response is a word that is unexpected in the semantic context.

The N400 is the brain's response to an unexpected or surprising event, but not every kind of surprise will produce an N400. In other words, we have expectations about things besides the meanings of sentences. Think about a simple sentence like, "The bread was…" If that sentence finishes with "eaten", that fits our mind's expectation, and this is the baseline brain response. Now, what expectation do you have for this sentence, "The ice cream was in the.."? You probably expect a noun to come next, to follow the preposition and determiner. But if what comes next is not a noun but a verb participle, this violates your mind's expectation. Notice that the word *eaten* is semantically consistent with ice cream, but is not consistent with the syntax of the sentence: determiners are followed by nouns, not verbs. So the brain's response is a positive voltage about 600 milliseconds after that unexpected word: a **P600**.

When we're using language in real time — either reading or listening — our mind sets up expectations about what's going to happen next. If what happens next violates our semantic expectations, the brain's response is an N400. And if what happens next violates our syntactic expectations, the brain's response is a P600.

These two different brain responses give us further evidence that syntax is independent of semantics in our brains!

This page titled 9.4: Neurolinguistics- Using EEG to Investigate Syntax and Semantics is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

9.5: Practice Time

Exercise 1. For each of the following words or phrases, describe an intension and an extension:

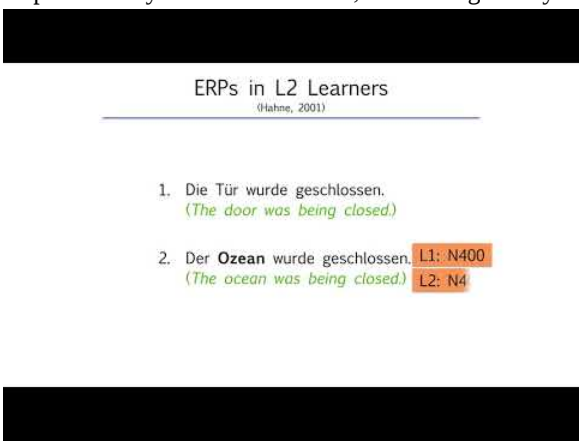
- university
- the fastest man in the world
- astronaut
- mayor

Exercise 2. Consider the category *vehicle*. Generate a list of at least twelve words that refer to members of the vehicle category, and rank them in order of most prototypical to most peripheral category members. Discuss, briefly, what features make something a prototypical vehicle. What features do the peripheral members have (or not have) that make them less prototypical?

This page titled 9.5: Practice Time is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

9.6: Neurolinguistics and Second Language Learning

Just like EEG can give us insights into the mental grammar of native speakers of a language, it can also reveal things about how L2 learners develop a mental grammar for the language they're learning. The results suggest that L2 learners can achieve native-like responses in syntax and semantics, with enough study and practice.



A YouTube element has been excluded from this version of the text. You can view it online here: ecampusontario.pressbooks.pub/essentialsoflinguistics/?p=205

Check Yourself

1. French uses morphology indicate whether nouns, adjectives and determiners are masculine or feminine. If an L1 speaker of English is learning French, what kind of transfer are they likely to experience in learning this property of French grammar?

- Positive transfer.
- Negative transfer.

2. Russian does not have definite or indefinite determiners like English *a* and *the*. If an L1 speaker of Russian is learning English, what kind of transfer are they likely to experience in learning this property of English grammar?

- Positive transfer.
- Negative transfer.

3. Russian groups nouns by their grammatical gender, either masculine, feminine or neuter. Look again at the facts about French presented in Question 1. If an L1 speaker of Russian is learning French, what kind of transfer are they likely to experience in learning this property of French grammar?

- Positive transfer.
- Negative transfer.

Answers

This page titled 9.6: Neurolinguistics and Second Language Learning is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

9.7: Summary

In this chapter, we examined the different ways that the meanings of words might be represented in the mind. Evidence from psycholinguistics tells us that prototypes play a role in the organization of our intensions, since words that refer to prototypical things are accessed more quickly than words that refer to peripheral things. Through our experience of encountering various extensions in the world (that is, various exemplars that belong to categories), our minds build up intensions for word meanings. These intensions allow us to categorize new exemplars that we encounter.

This page titled 9.7: Summary is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

CHAPTER OVERVIEW

10: Indigenous Languages

10.1: Elements of Word Meaning- Intensions and Extensions

10.2: Intensions in the Mind

10.3: Psycholinguistics of Word Meanings

10.4: Practice Time

10.5: Summary

This page titled 10: Indigenous Languages is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

10.1: Elements of Word Meaning- Intensions and Extensions

One way to define the meaning of a word is to point to examples in the world of things the word refers to; these examples are the word's **denotation**, or **extension**. Another component of a word's meaning is the list of attributes in our mind that describe the things the word can refer to; this list is the **intension** of a word.



A YouTube element has been excluded from this version of the text. You can view it online here: ecampusontario.pressbooks.pu...uistics/?p=212

Check Yourself

1. Sidney Crosby, Wayne Gretzy, and Maurice Richard, are all _____ of the phrase *hockey player.*

- Extensions.
- Intensions.
- Connotations.

2. *Has pages*, *binding*, and *contains writing* are all _____ of the word *book*.

- Extensions.
- Intensions.
- Connotations.

3. *Head of state*, *lives in the White House*, and *American* are all _____ of the phrase *President of the United States*.

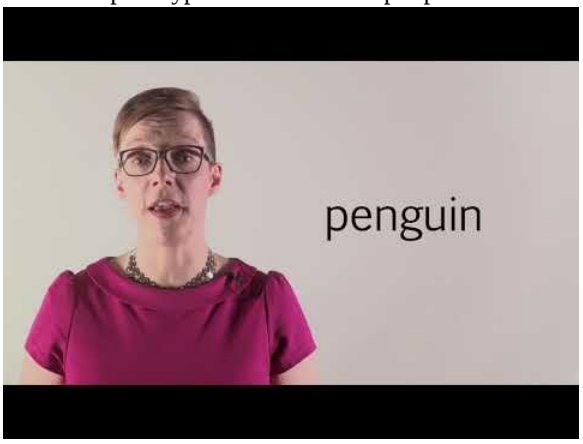
- Extensions.
- Intensions.
- Connotations.

Answers

This page titled 10.1: Elements of Word Meaning- Intensions and Extensions is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

10.2: Intensions in the Mind

This unit considers two possible ways that intensions might be organized in our minds. It's possible that some intensions are organized around sets of binary features (similar to phonetic features!) that divide up the world into clear categories. But binary features don't leave room for exceptions. It's also possible that our mind organizes word meanings around fuzzy categories, which have both prototypical members and peripheral members.



A YouTube element has been excluded from this version of the text. You can view it online here: https://ecampusontario.pressbooks.pu...uistics/?p=214

Check Yourself

1. Thinking about the category *animals* for most speakers of Canadian English, *giraffe* is probably:

- More typical than cat.
- Less typical than dog.
- Less typical than wildebeest.

2. Thinking about the category *pets* for most speakers of Canadian English, *tarantula* is probably:

- Typical.
- More typical than goldfish.
- Peripheral.

3. Choose the set of features that best defines *chair*.

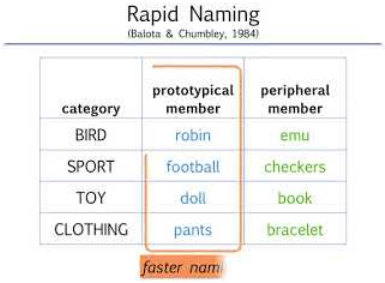
- [+furniture, +legs, +back, +seat, -blankets].
- [+furniture, +legs, +back, -seat, +blankets].
- [+furniture, -legs, -back, +seat, +blankets].
- [+furniture, -legs, -back, +seat, -blankets].

Answers

This page titled 10.2: Intensions in the Mind is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

10.3: Psycholinguistics of Word Meanings

Behavioural psycholinguistic experiments can give us some insights into how word meanings are represented in the mind. The results of these experiments suggest that prototypes and fuzzy categories do play a part in our mental representations of word meanings, and that related word meanings are connected to each other in our minds.



A YouTube element has been excluded from this version of the text. You can view it online here: ecampusontario.pressbooks.pu...uistics/?p=216

Check Yourself

1. Which of the following words would we expect to prime a target word *carrot*?

- Power.
- Broccoli.
- Cattle.
- Car.

2. Which of the following words would we expect to prime a target word *happy*?

- Rabbit.
- Umbrella.
- Sad.
- Zoo.

3. Which of the following words would we expect to prime a target word *week*?

- Month.
- Actor.
- Goal.
- Unit.

Answers

This page titled 10.3: Psycholinguistics of Word Meanings is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

10.4: Practice Time

Exercise 1. Listen again to the interview with David Kanatawakhon-Maracle in Unit 11.4. At 6:38 of the interview, he describes the trouble that English speakers often have pronouncing his name, Kanatawakhon. Try to transcribe this name in IPA, giving as detailed a narrow transcription as you can.

Exercise 2. Imagine you are working as a linguistic consultant with a community who is working to document their language. What kind of questions would you ask the fluent speakers, to elicit language data?

Exercise 2. Imagine you are working as a linguistic consultant on some audio-recordings of speech from fluent speakers of an Indigenous language. What information would you try to obtain from these audio-recordings? What linguistics skills would you use? Where would you start?

This page titled 10.4: Practice Time is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

10.5: Summary

This Chapter included several excerpts of an interview with a fluent Mohawk speaker, David Kanatawakhon-Maracle. In the interview, Dr. Kanatawakhon-Maracle talked about how important language is to the identity of an Indigenous person. Although most of the Indigenous languages spoken in what is currently Canada are quite endangered, it will be possible to preserve some of them. Teaching the languages to young people is a vital part of the preservation effort, and having useful, accurate teaching materials is important for effective teaching. People with training in Linguistics can make valuable contributions to supporting communities in documenting languages and creating teaching materials.

This page titled 10.5: Summary is shared under a CC BY-SA 4.0 license and was authored, remixed, and/or curated by Catherine Anderson (eCampusOntario) via source content that was edited to the style and standards of the LibreTexts platform.

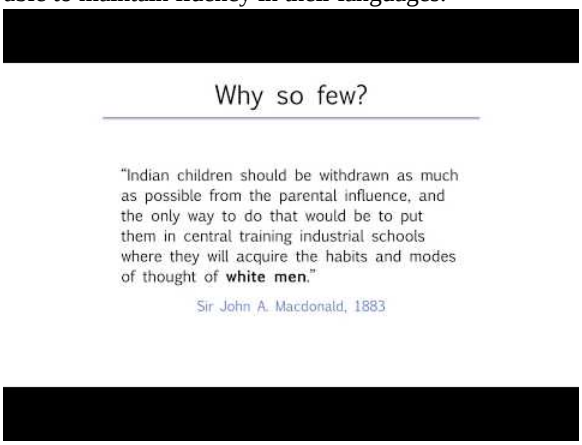
CHAPTER OVERVIEW

11: Back Matter Tests

11.1: Indigenous Languages and the Legacy of Residential Schools
11.2: Testing Keys
11.3: Preserving Mohawk
11.4: Learning Mohawk
11.5: Mohawk Culture and Language
11.6: Creating Materials for Teaching Mohawk
11.7: Speaking Mohawk and Reconciliation
11.8: The Future of Indigenous Languages in Canada

11.1: Indigenous Languages and the Legacy of Residential Schools

Many of the Indigenous languages spoken in what is currently Canada are quite endangered, because of deliberate strategies by the settler government. For over 100 years, children from Indigenous communities were forced to attend residential schools where they were severely punished for speaking their home languages. The consequence was that fewer and fewer Indigenous people were able to maintain fluency in their languages.



A YouTube element has been excluded from this version of the text. You can view it online here: https://ecampusontario.pressbooks.pub/essentialsoflinguistics/?p=223

Video Script

A lot of our attention so far has focused on English, which is convenient because it's a language that we all know, but we can learn a lot about mental grammar by looking at other languages. Canada has an incredibly rich and diverse history of languages that were spoken by Aboriginal peoples long before European settlers arrived. Linguists estimate that there were more than two hundred different Indigenous languages spoken in this region, and these languages were quite different from each other — they formed about 15 different language families.

At the time of the 2016 census in Canada, there were still about two hundred and thirteen thousand people speaking about 64 different Indigenous languages from 12 different language families. Some of these languages, like Cree, Inuktitut and Ojibwe, are quite healthy, with thousands of speakers. But many more Indigenous languages are critically endangered — they have only a few hundred or a few dozen speakers who are quite elderly. When those speakers die, the language could die with them.

Why have so many of the Aboriginal languages been lost? It's tempting to attribute it to economic and cultural pressures — TV shows and books and music are all in English, and everyone wants to speak English to get a job — but it's not as simple as that. From the time that European settlers first arrived in this region, they engaged in deliberate strategies to try to eliminate First Nations people and their culture and language. The settlers engaged in war with the Indigenous people and brought new germs that caused devastating epidemics. The Europeans took over fertile land to grow their own crops and forced Indigenous people to live in small, confined reserves that could not sustain the crops to feed their people.

And these strategies aren't just from hundreds of years ago: between the 1960s and the late 1980s, the Canadian government seized thousands of Aboriginal children from their homes and placed them forcibly in foster homes and adoptive homes largely with white families, which meant that the children did not learn their parents' language. This forced adoption is sometimes called the "sixties scoop", and it continued the tradition of the residential schools.

The residential school system existed in Canada for more than 100 years, and the last residential school closed in 1996, not very long ago. Aboriginal children were taken from their families and forced to live in quite appalling conditions in schools that were run by the government and by the churches. The person who initiated the system was Sir John A Macdonald, Canada's first prime minister. He was quite clear that the whole purpose of taking children from their families was to make sure that they grew up without knowledge of their history, language, and culture. Here's his attitude about children who grow up in their families and communities:

"When the school is on the reserve the child lives with its parents, who are savages; he is surrounded by savages, and though he may learn to read and write, his habits, and training and mode of thought are Indian. He is simply a savage who can read and write."

And here's what his plan was:

"Indian children should be withdrawn as much as possible from the parental influence, and the only way to do that would be to put them in central training industrial schools where they will acquire the habits and modes of thought of white men."

He was completely open about his goals: he wanted Aboriginal children to stop thinking and speaking in the ways they learned in their families and communities, and to start thinking and speaking like white men.

In 2015, Canada's Truth and Reconciliation Commission issued its report, after years of consulting with survivors of residential schools. The executive summary begins this way:

"These residential schools were created for the purpose of separating Aboriginal children from their families, in order to minimize and weaken family ties and cultural linkages, and to indoctrinate children into a new culture—the culture of the legally dominant Euro-Christian Canadian society."

The TRC's Calls to Action acknowledge the crucial role that Indigenous languages will play in achieving reconciliation between Aboriginal people and the larger Canadian population. Here are just some of the Calls to Action.

- We call on the federal government to draft new Aboriginal education legislation including protecting the right to Aboriginal languages [and] the teaching of Aboriginal languages as credit courses.
- We call upon the federal government to enact an Aboriginal Languages Act that incorporates the following principles:
- Aboriginal languages are a fundamental and valued element of Canadian culture and society, and there is an urgency to preserve them.
- The federal government has a responsibility to provide sufficient funds for Aboriginal-language revitalization and preservation.
- The preservation, revitalization, and strengthening of Aboriginal languages and cultures are best managed by Aboriginal people and communities.
- Funding for Aboriginal language initiatives must reflect the diversity of Aboriginal languages.
- We call upon post-secondary institutions to create university and college degree and diploma programs in Aboriginal languages.

So there is a need for language preservation, revitalization and teaching. What can linguists do to help with these efforts? Of course the most important thing is to work with Aboriginal communities, to listen to the community members and find out from them what they think would be most valuable.

Some linguists have helped to document Indigenous languages, recording and transcribing speech and stories from native speakers. This is especially crucial when the speakers are elderly and the language is critically endangered. Documenting a language also involves doing phonological, morphological and syntactic analysis to be able to write grammar books and dictionaries for the language. Some linguists have also helped to develop writing systems for languages that didn't have any written form. If a language has been documented, then linguists can help to create educational resources and curriculum material that language teachers can use, and can help to train language teachers.

11.2: Testing Keys

Chapter 1 Thinking Like a Linguist

1.1 Linguistics is Science

1. What does it mean to say that Linguistics is a science? **The field uses empirical observations to develop theories of language behaviour.**

2. Each of the following sentences represents something someone might say about language. Which of them illustrates a descriptive view of language? **The use of quotative *like* in sentences such as, "She was like, I can't believe you did that!" began to enter Canadian English with the generation of speakers born in 1971.**

3. Which of the following kinds of data would a linguist be likely to observe? **Whether Korean includes tones that change the meaning of words.**

1.2 Mental Grammar

1. Newspaper headlines occasionally have unexpectedly funny interpretations. One example is: T*wo cars were reported stolen by the police yesterday.* Which part of your mental grammar leads to the possibility that the police could have done the stealing or the reporting in this headline? **Syntax, Semantics.**

2. Newfoundland English has some characteristic differences to standard Canadian English. The following sentences are grammatical in Newfoundland English: *I eats toast for breakfast every day*. *You knows the answer to that question.* What part of the mental grammar of Newfoundland English is different to Canadian English in these examples? **Morphology.**

3. When speakers of Hawaiian pronounce the English phrase, "Merry Christmas", it sounds like: *mele kalikimaka*. What part of the mental grammar of Hawaiian is responsible for how the English phrase gets pronounced? **Phonology.**

1.3 Creativity & Generativity

1. What does it mean to say that mental grammar is generative? **The principles of mental grammar allow us to form completely novel sentences, and to understand them when we hear them.**

2. The systematic principles of English phonology generate some word forms but not others. Which of the following words could be a possible word in English? **Klaff.**

3. The systematic principles of English syntax generate some sentences but not others. Which of the following sentences is not possible in English? **Herself have wrote these excellent book.**

1.4 Fundamental Properties of Language

1. It's important to study Latin because Latin is more logical than other languages. **False.**

2. Spending too much time texting will ruin your ability to write proper English. **False.**

3. The dictionary gives the only correct meaning and pronunciation for words. **False.**

Chapter 2 Producing Speech Sounds

2.1 How Humans Produce Speech

1. What is the voicing of the **last** sound in the word 'soup'? **Voiceless.**

2. What is the voicing of the **last** sound in the word 'life'? **Voiceless.**

3. What is the voicing of the **last** sound in the word 'seem'? **Voiced.**

2.2 Articulators

1. What is the place of articulation of the FIRST sound in the word 'minor'? **Bilabial.**

2. What is the place of articulation of the FINAL sound in the word 'wit'? **Alveolar.**

3. What is the place of articulation of the FIRST sound in the word 'photography'? **Labiodental.**

2.3 Describing Speech Sounds: the IPA

1. The vowel sounds in the words *neat* and *spread* are both spelled "ea". Do the vowels in the two words sound the same as each other or different? **Different.**

2. Are the final sounds in the words *face* and *mess* the same as each other or different? **Same.**

3. Are the first sounds in the two words *gym* and *gum* the same as each other or different? **Different.**

2.5 Sonority, Consonants & Vowels

1. What kind of sound is the first sound in the word *early*? **Vowel.**

2. What kind of sound is the first sound in the word *junior*? **Voiced consonant.**

3. What kind of sound is the first sound in the word *winter*? **Glide.**

2.6 Classifying Consonants

1. What is the articulatory description for the consonant sound represented by the IPA symbol [p]? **Voiceless bilabial stop.**

2. What is the correct articulatory description for the consonant sound represented by the IPA symbol [ð]? **Voiced dental fricative.**

3. What is the correct articulatory description for the consonant sound represented by the IPA symbol [ʃ]? **Voiceless post-alveolar fricative.**

2.7 Classifying Vowels

1. What is the articulatory description for the vowel [i]? **High front unrounded tense vowel.**

2. What is the articulatory description for the vowel [ɛ]? **Mid front unrounded lax vowel.**

3. What is the articulatory description for the vowel [ɑ]? **Low back unrounded tense vowel.**

2.8 Diphthongs

1. What is the diphthong sound in the word in the word *proud*? **[aʊ].**

2. What is the diphthong sound in the word in the word *rain*? **[eɪ].**

3. What is the diphthong sound in the word in the word *sigh*? **[aɪ].**

Chapter 3 Transcribing Speech Sounds

3.3 Syllabic Consonants

1. The video indicated that the word *funnel* can be transcribed to indicate that the second syllable consists of a syllabic [l̩]. The word *elbow* is also spelled with the letters 'el'. Say the two words to yourself several times. Which is the correct transcription for *elbow*? **[ɛlboʊ].**

2. The words *human* and *manager* both contain a syllable that is spelled with the letters 'man'. In which word does that syllable contain a syllabic [n̩]? **Human.**

3. In the word *umbrella*, is the [m] syllabic? **No.**

3.4 Aspirated Stops in English

1. The following city names all contain the letter 't' within the word. In which of them is the letter 't' pronounced as [t^h]? **Victoria.**

2. The following words all contain the segment /k/. In which of them is it pronounced as the allophone [k^h]? **Accomplish.**

3. The following words all contain the segment /p/. In which of them is it pronounced as the allophone [p^h]? **Appearance.**

3.5 Articulatory Processes: Assimilation

1. What articulatory process is at work when the word *bank* is pronounced as [bæŋk]? **Assimilation (Anticipatory / Regressive).**

2. What articulatory process is at work when a child pronounces the word *yellow* as [lɛloʊ]? **Assimilation (Anticipatory / Regressive).**

3. What articulatory process is at work when the word *cream* is pronounced as [kɻijm]? **Assimilation (Perseveratory / Progressive).**

3.6 Other Articulatory Processes

1. What articulatory process is at work when the word *idea* is pronounced as [ajdijɚ]? **Epenthesis.**

2. What articulatory process is at work when the word *gorilla* is pronounced as [ɡɹɪlʌ]? **Deletion.**

3. What articulatory process is at work when the word *you* is pronounced as [jə]? **Reduction.**

3.7 Suprasegmentals

1. Young children's voices are usually recognizably different from adult's voices. Which factor is likeliest to be different between children's speech and adults' speech? **Pitch.**

2. In English, yes-no questions often conclude with rising pitch, whereas wh-questions often have a falling pitch on the final words. Is this pitch difference a difference in tone or in intonation? **Intonation.**

3. English uses pitch as one factor in syllable stress. There are many English pairs of words like *record* (noun) and *record* (verb), which are spelled the same but differ in their stress patterns. Which of the following is true for this pair of words? **The first syllable has a higher pitch than the second in the noun record.**

Chapter 4 Speech Sounds in the Mind

4.1 Phonemes and Contrast

1. Are the phonetically different segments [m] and [n] phonemically contrastive in English? **Yes.**

2. Are the phonetically different segments [p] and [p^h] phonemically contrastive in English? **No.**

3. Do the words *sight* and *site* form a minimal pair in English? **No.**

4.2 Allophones and Predictable Variation

1. Remember that in English, voiceless stops are aspirated at the beginning of a word and the beginning of a stressed syllable, but never in the middle of a word nor at the end of a word. Which term best describes this pattern? **Complementary distribution.**

2. The symbol [ɬ] represents a velarized [l]. Looking at the following set of transcribed English words, what can you conclude about [l] and [ɬ] in English? **[l] and [ɬ] are in complementary distribution in English.**

leaf [lif] fall [fɑɬ]

luck [lʌk] spill [spɪɬ]

lemon [lɛmən] wolf [wʊɬf]

3. Remembering that the alveolar flap [ɾ] appears in a predictable environment in English (see Section 3.9), which statement is true for English? **The segments [t] and [ɾ] are allophones of the same phoneme in English.**

4.3 Phonetic Segments and Features

1. These two segments — [w] [o] — have many features in common. Which feature distinguishes them? **[syllabic].**

2. These two segments — [p] [f] — have many features in common. Which feature distinguishes them? **[continuant].**

3. These two segments — [p] [b] — have many features in common. Which feature distinguishes them? **[voice].**

4.4 Natural Classes

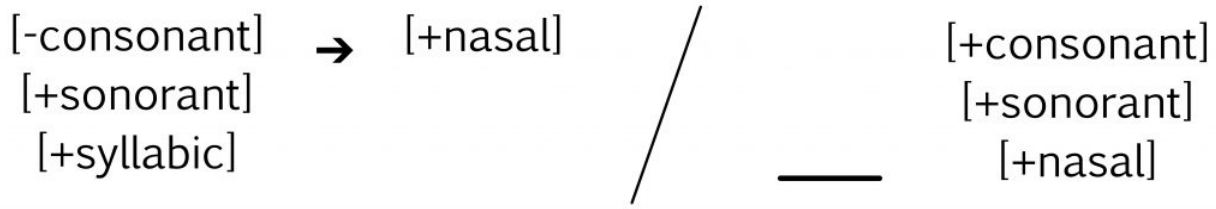
1. In the following set of segments, which segment must be excluded to make the remaining segments constitute a natural class? **[æ].**

2. In the following set of segments, which segment must be excluded to make the remaining segments constitute a natural class? **[f].**

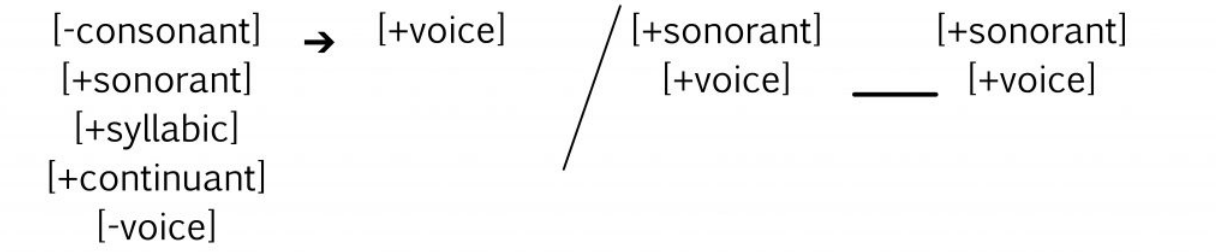
3. This set of segments constitutes a natural class: [i ɛ æ]. Which segment could you add to the set while still preserving the natural class? **[ɪ].**

4.5 Phonological Derivations

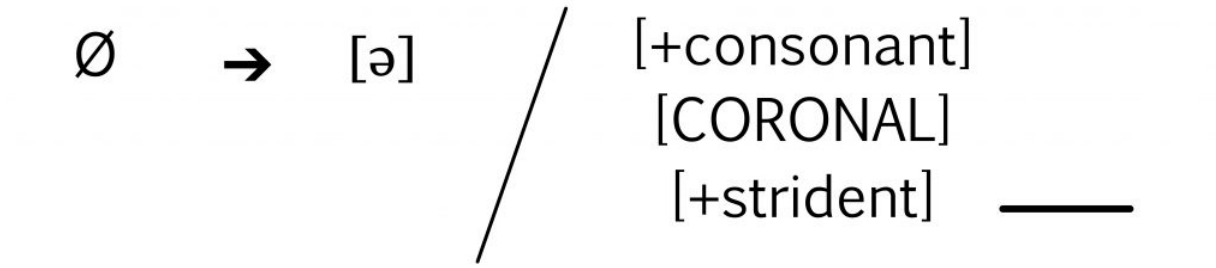
1. Which phonological rule accurately represents the process, “vowels become nasalized before a nasal consonant”?



2. Which sentence accurately describes the process depicted in this phonological rule? Voiceless fricatives become voiced between voiced sonorants



3. Which sentence accurately describes the process depicted in this phonological rule? The segment [ə] is epenthesized following a strident consonant.



Chapter 5 Psycholinguistics of Sound

5.1 How Babies Learn the phoneme categories of their language

1. The phonology of Thai contains a three-way contrast between voiced /b/, voiceless /p/, and aspirated /p^h/. How likely is it that a six-month-old baby growing up in an English-speaking household would be able to hear the difference between Thai [p] and [p^h]? **Very likely.**

2. Arabic phonology includes a contrast between uvular and pharyngeal fricatives. How likely is it that a two-year-old growing up in an English-speaking household would be able to hear the difference between these two places of articulation? **Very unlikely.**

3. In the various dialects of Chinese, there is no phonemic contrast between tense and lax vowels. How likely is it that a four-month-old baby growing up in a Mandarin Chinese-speaking household would be able to hear the contrast between English [e] and [ɛ]? **Very likely.**

5.2 How Adults Learn

1. In Canadian French, the front tense vowels [y] and [i] become the lax vowels [ʏ] and [ɪ] in certain environments. Is it likely to be easy or difficult for a native speaker of Canadian French to learn the English contrast between /i/ and /ɪ/ (as in *sleep* and *slip*)? **Difficult.**

2. Arabic includes a contrast between a voiceless velar fricative [x] and a voiced velar fricative [ɣ]. Is this contrast likely to be easy or difficult for native speakers of English to learn? **Easy.**

3. In Cree, voiceless stops become voiced between vowels. Given that Cree has both voiced and voiceless stops in its phonetic inventory, is it likely to be easy or difficult for a native speaker of Cree to learn the phonemic contrast between /b/ and /p/ in English? **Difficult.**

Chapter 6 Word Forms

6.3 Inflectional Morphology

1. What type of grammatical information does the inflectional affix in the word *speeches* communicate? **Number.**

2. What type of grammatical information does the inflectional affix in the word *climbed* communicate? **Tense.**

3. What type of grammatical information does the inflectional difference between *he* and *him* indicate? **Case.**

6.4 Derivational Morphology

1. Which of the following best describes the derivation of the word *assignment*? **Verb + -ment ➔ Noun.**

2. Which of the following best describes the derivation of the word *skillful*? **Noun + -ful ➔ Adjective.**

3. Which of the following best describes the derivation of the word *simplify*? **Adjective + -ify ➔ Verb.**

Chapter 7 Combining Words

7.2 Compound Words

1. In the sentence, “The room contained a bearskin rug,” what kind of compound is *bearskin*? **Endocentric.**

2. In the sentence, “Randy worked as a cowhand on the ranch,” what kind of compound is *cowhand*? **Exocentric.**

3. In the sentence, “Hyunji manages a bookshop,”, what kind of compound is *bookshop*? **Endocentric.**

7.5 Neurolinguistics: Syntactic Category Differences in the Brain

1. Comparing the following sets of words, which would you predict would lead to greater blood flow in more areas of the brain? **Humming, singing, whistling.**

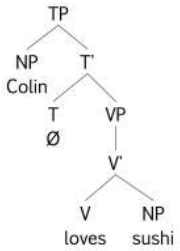
2. When shown a picture of a pair of tongs, a patient describes the picture, “You pick up things with it”. Which type of aphasia is this response more typical of? **Anomic aphasia.**

3. When describing an injury to his knees, a patient says, “no good uh ache and uh uh uh knees and ankles uh home doctor and legs”. Which type of aphasia is this response more typical of? **Agrammatic aphasia.**

Chapter 8 Forming Sentences

8.1 Tree Diagrams

In the following tree diagram:



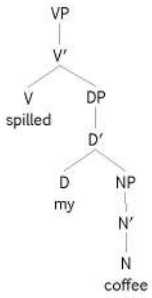
1. What is the structural relationship between V *loves* and NP *sushi*? **V and NP are sisters.**

2. What is the structural relationship between NP *Colin* and V *loves*? **NP and V are not related in any of these three ways.**

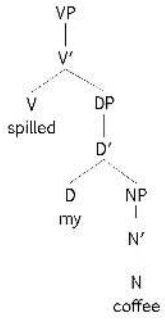
3. Which node is the sister of NP *Colin*? **T'**

8.2 X-bar Phrase Structure

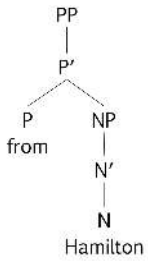
1. In this tree diagram, what position does the DP *my coffee* occupy? **Complement.**



2. In this tree diagram, what position does the D *my* occupy? **Head.**

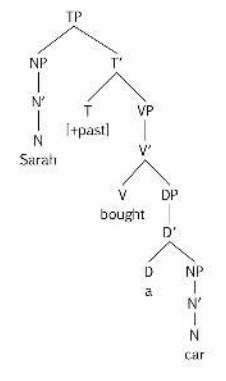


3. In this tree diagram, what position does the NP *Hamilton* occupy? **Complement.**

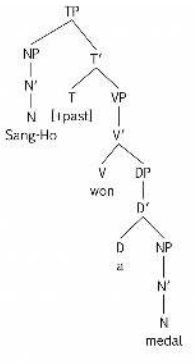


8.4 Sentences are Phrases

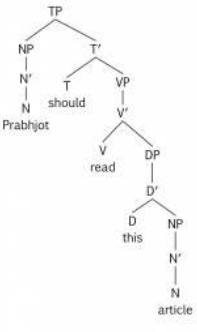
1. Which of the following is the correct representation for the sentence *Sara bought a car*?



2. Which of the following is the correct representation for the sentence *Sang-Ho won a medal*?



3. Which of the following is the correct representation for the sentence *Prabhjot should read this article*?



8.6 Subcategories

1. What is the subcategory of the underlined verb in this sentence? The soccer players kicked the ball. **Transitive.**

2. What is the subcategory of the underlined verb in this sentence? Many birds fly over Ontario each fall. **Intransitive.**

3. What is the subcategory of the underlined verb in this sentence? This game teaches children the alphabet. **Ditransitive.**

8.8 Adjuncts

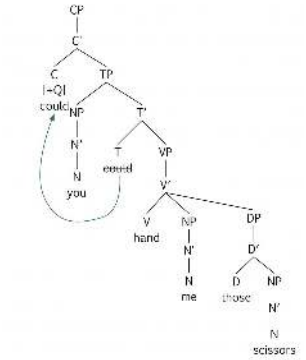
1. Is the underlined phrase an adjunct or a complement? *Sam ran the Around-the-Bay race*. **Complement.**

2. Is the underlined phrase an adjunct or a complement? *Sam ran this morning*. **Adjunct.**

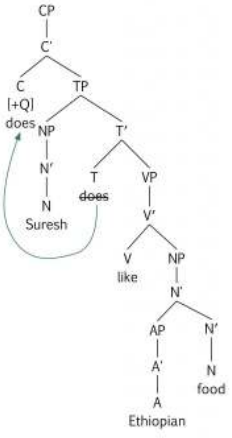
3. Is the underlined phrase an adjunct or a complement? *The baby slept through the night*. **Adjunct.**

8.9 Move

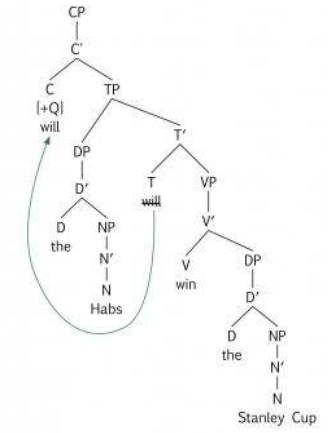
1. Which tree diagram correctly represents the question, *"Could you hand me those scissors?"*



2. Which tree diagram correctly represents the question, *"Does Suresh like Ethiopian food?"*

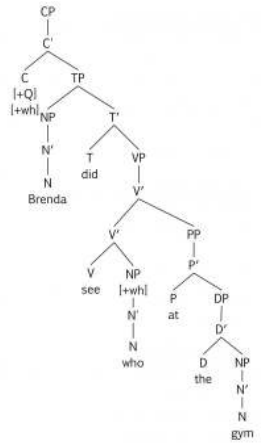


3. Which tree diagram correctly represents the question, *"Will the Habs win the Stanley Cup?"*

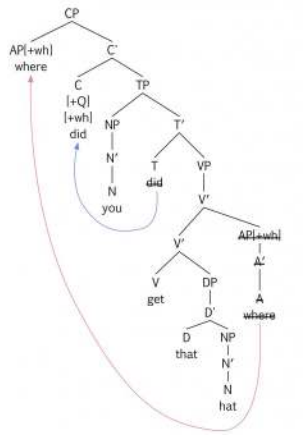


8.10 Wh-Movement

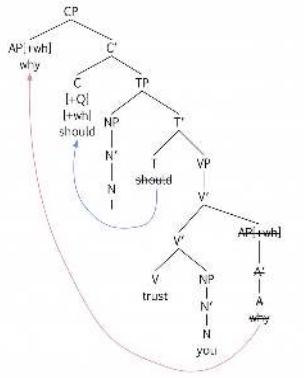
1. Which tree diagram correctly represents the Deep Structure for the question, *"Who did Brenda see at the gym?"*



2.Which tree diagram correctly represents the Surface Structure for the question, *"Where did you get that hat?"*



3. Which tree diagram correctly represents the Surface Structure for the question, *"Why should I trust you?"*



8.12 Psycholinguistics: Traces in the Mind

1. Which of the following illustrates the position of the trace in the wh-question W*hat did Christina order at Chipotle?***What did Christina order what at Chipotle.**

2. Which of the following ungrammatical sentences gives evidence that unpronounced traces exist in our mental representations of sentences? ***What did you eat sandwiches for lunch?**

3. Predict which sentence would lead to more eye movements to a picture of a rabbit after the verb *chase*. **What did the fox chase ^ into the hedge?**

Chapter 9 Sentence Structure and Meaning

9.2 Events, Participants, and Thematic Roles

1. What label best describes the thematic role of the underlined NP? The guard chased the intruder. **Agent.**

2. What label best describes the thematic role of the underlined NP? The wind slammed the door shut. **Cause.**

3. What label best describes the thematic role of the underlined NP? The guard followed the intruder. **Theme.**

9.3 Thematic Roles and Passive Sentences

1. Is the following sentence in the active or passive voice? The patient was diagnosed with alopecia. **Passive.**

2. Is the following sentence in the active or passive voice? Eileen was convinced that her appointment had been cancelled. **Passive.**

3. Is the following sentence in the active or passive voice? The children had been invited to a tea party. **Passive.**

9.4 Neurolinguistics: Using EEG to Investigate Syntax and Semantics

1. What kind of ERP is likely to be observed in response to this sentence? The children's feet have grown so I bought them some new spoons. **N400.**

2. What kind of ERP is likely to be observed in response to this sentence? Elias told the coach that he wanted to learn to swam. **P600.**

3. What kind of ERP is likely to be observed in response to this sentence? Before the dinner party, Isla spent a long time in the cooked. **P600.**

9.5 Neurolinguistics and Second Language Learning

1. French uses morphology indicate whether nouns, adjectives and determiners are masculine or feminine. If an L1 speaker of English is learning French, what kind of transfer are they likely to experience in learning this property of French grammar? **Negative transfer.**

2. Russian does not have definite or indefinite determiners like English *a* and *the*. If an L1 speaker of Russian is learning English, what kind of transfer are they likely to experience in learning this property of English grammar? **Negative transfer.**

3. Russian groups nouns by their grammatical gender, either masculine, feminine or neuter. Look again at the facts about French presented in Question 1. If an L1 speaker of Russian is learning French, what kind of transfer are they likely to experience in learning this property of French grammar? **Positive transfer.**

Chapter 10 Word Meanings

10.1 Elements of Word Meaning: Intensions and Extensions

1. Sidney Crosby, Wayne Gretzy, and Maurice Richard, and _____ of *hockey player*. **Extensions.**

2. *Has pages*, *binding*, and *contains writing* are all _____ of *book*. **Intensions.**

3. *Head of state*, *lives in the White House*, and *American* are all _____ of *President of the United States*. **Intensions.**

10.2 Intensions in the Mind

1. For most speakers of Canadian English in the category *animals*, *giraffe* is probably: **Less typical than dog**.

2. For most speakers of Canadian English, in the category *pets*, *tarantula* is probably: **Peripheral**.

3. Choose the set of features that best defines *chair*. **[+furniture, +legs, +back, +seat, -blankets]**.

10.3 Psycholinguistics of Word Meanings

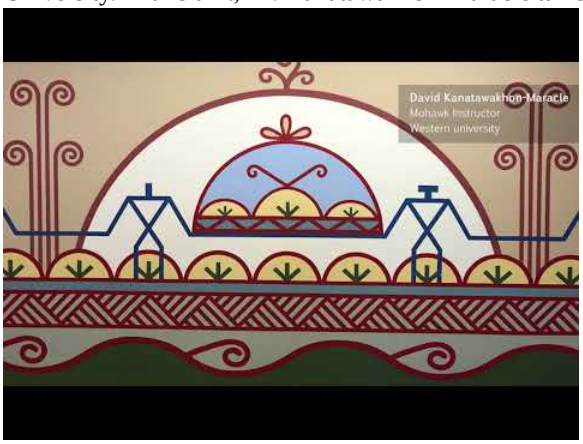
1. Which of the following words would we expect to prime a target word *carrot*? **Broccoli.**

2. Which of the following words would we expect to prime a target word *happy*? **Sad.**

3. Which of the following words would we expect to prime a target word *week*? **Month.**

11.3: Preserving Mohawk

The next several units are excerpts from a conversation with David Kanatawakhon-Maracle, a Mohawk instructor at Western University. In this unit, Dr. Kanatawakhon-Maracle talks about how, for a language to survive, it must be widely spoken.



A YouTube element has been excluded from this version of the text. You can view it online here: https://ecampusontario.pressbooks.pub/essentialsoflinguistics/?p=225

Video Script

I've been a language teacher for years, you know, and trying to teach and there's always been this segment of people out there who "really support what you're doing" and stuff like that and I've gotten into the habit of just ignoring them because their support is verbal; they're not in my classes; they're not learning the language. Real support for an Aboriginal language is getting out there and learning that language and learning to speak it, you know, so, to help bring that language back into its own. I don't expect any community to work towards, you know, sole monolingualism — that's that's just not doesn't make sense — however, bilingualism is a fairly normal way to be with a large percentage of the world's population. And, and, for, you know, my grandparents, my grandfather was bilingual, you know, and my great-grandparents were bilingual and they could use English when they needed to and they used Mohawk when they needed to and, or by choice or whatever.

I speak Mohawk and English so the thing is I can also, you know, use both languages. I … the difference I guess is that I also read and write Mohawk as well. So I'm a speaker and I'm literate which is the sort of thing that we would want to teach students especially at the university level because there's a lot of stuff written in Aboriginal languages that are presently not available in English or, you know or probably doesn't necessarily have to be available in English if they're speakers of the language.

People have always said you know, "Oh yeah, we know that the language should be in the home." No! The language should be in the street! If the language is surviving — if the language is truly an important part of being — it's in the street; it's in the stores; it's outside of the home. When you keep the language in the home it dies, because the speakers of the language eventually leave that home and then they go into the street where they're speaking English all the time and they meet somebody else who is also speaking English and eventually … the next generation is being raised by two English-speaking people and of course then the language is, is gone.

> [CA: Would you say that that attitude that says "oh the language is for at home," is that, is that another legacy of colonialism where it was shameful to speak an Aboriginal language?]

Yeah well let's keep it.

> [CA: Yeah, it's private, but not outside the house.]

Yeah and the real problem is that when when the language is only spoken in the home especially in contemporary society where people are, spending more and more time at home in front of some sort of technical device — in times past they were out going from home to home and all people were speaking the language and visiting and the language is very much alive — but once it becomes ensconced within the home and people get to the point where, sure they can talk to their parents, but they can't really understand their neighbours.

11.4: Learning Mohawk

Some Mohawk people have learned to speak Mohawk by growing up among fluent speakers. Many others are trying to learn to speak Mohawk in school or in university. Having some knowledge of linguistics can make learning a second language easier in some ways.



A YouTube element has been excluded from this version of the text. You can view it online here: https://ecampusontario.pressbooks.pub/essentialsoflinguistics/?p=227

Video Script

One of the things about language is — I understand Mohawk and I speak Mohawk because I've heard hundreds of people speaking it.

> [CA: Right. So that's how you learned it, was growing up in the community where it was spoken?]

Yeah I basically grew up with Mohawk and English and as I got to be a teenager I spent a lot more time with the older folks because they were more inclined to be speakers. Also, I find old people a lot more entertaining than younger adults, you know, they no longer have the sort of worries that, and the stress, that younger people have. And the stories, I mean, the really funny thing is that I find with older people, with the old folks, they're not very trusting, you know you basically have to visit them a lot before you kind of crack that shell and you get access to, to what they what they know. And I suppose to a certain degree that's self-serving but at the same time these people have got, they've got tradition to pass on; their responsibility is to be passing on this stuff and if they've decided that well nobody wants to hear that you know and so they stop telling it then it, it dies with them. So I found that spending a lot of time with the older folks you hear a lot of stories.

And the funny thing too about, one of the things that I found with the language is they were a lot more fun in Mohawk than they were in English. They get cranky and grumpy and unhappy when they speak English and I don't know why because, it just, I had an uncle used to visit and, well, boy I mean this he had a complaint about everything he had a gripe about everything and stuff and it always seemed to be so grating in English but when he was speaking Mohawk we spent a lot more time laughing. Because that was the language of his childhood and that was how he grew up and he's, you know, he would tell stories from that time where it's often you know were, were a lot more amusing or a lot more interesting than what he was having to deal with presently in English.

I've had students that have come in that have taken a number of years in the immersion program at Six Nations. They seem to have a sense of the language but they're not speakers. The course that I teach right now is a fairly heavy grammar-based course because I find that if I mean you can you can learn all the vocabulary you want, but if you have no sense of the grammar of the language, how are you going to utilize that vocabulary? What are you gonna do with it? And the thing is that the students that have come in that have some language, they know a lot of vocabulary… can't do a thing with it! They know how to say expressions; they know dialogues; they know a whole lot of things that I find is, okay, great, so you at least know the pronunciation, which is a good place to start. Anglophones can't get past what they see written. "Well, but that's a 't' it's written as a 't'." I says yeah, it's pronounced [d].

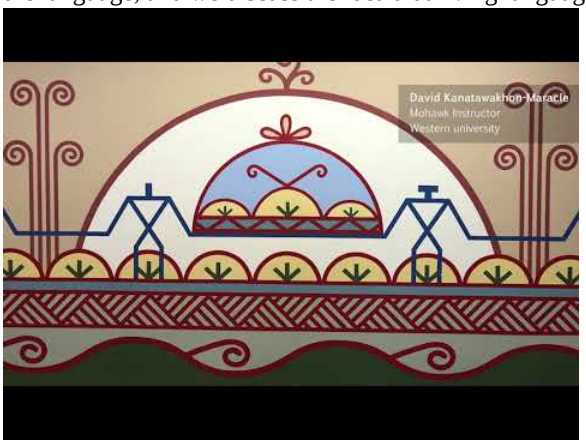
> [CA: And here's where, actually, thinking of my students the having a bit of Introduction to Linguistics would help to say, well, look, this is a, this is an allophone and it's voiced in these circumstances and voiceless here, someone who

has Intro Linguistics might get that.]

Yup. I had students who will comment on the fact that they've taken a linguistics course and it has helped their pronunciation it does make them more aware of it. […]

11.5: Mohawk Culture and Language

In this unit, Dr. Kanatawakhon-Maracle mentions some of the elements of Mohawk culture that are embedded in the grammar of the language, and we discuss the idea that living languages are always changing.



A YouTube element has been excluded from this version of the text. You can view it online here: https://ecampusontario.pressbooks.pub/essentialsoflinguistics/?p=229

Video Script

What I also do too is that I include culture with the language. I'll be teaching them a particular word or phrase or expression but then I'll tell them where it comes from — why it is this way — why we say it that way — why we don't say this word. I mean, the word *nyaweh* in Mohawk gets interpreted as 'thank you' in English but that's kind of the beginning and the end of it. We don't, the reality is, if you follow older tradition, which is the way I was raised, you don't say *nyaweh* for every little thing; you don't use it the way it's used in English. In English it's just thank you thank you thank you — it becomes meaningless; it becomes a grunt, quite literally, in the English language, because people just use it so freely that it starts to lose its meaning. In Mohawk, *nyaweh* is used, or should only be used, between yourself and the Creator even when you say *nyaweh*, you know you see something beautiful, you see a sunset, a beautiful flower, nice majestic scenery or whatever, stuff like that, then you say *nyaweh* because now that *nyaweh* is directed towards the Creator and it's showing appreciation for what you're dealing with. When we sit at the table and we eat, the first one that gets up says *nyaweh*, not for the food, you know, but for, for the opportunity to sit with other people and share food. We're getting into the habit of using it much the same way it's used in English — you'll hear young, young speakers, more contemporary ones that are using or learning the language, they'll use *nyaweh* the same way they do and I said, No! (laughter).

[CA: Well I wonder, is there, is there a tension there that, so, on the one hand, you want to honour the traditions and the things you've learned from the Elders and from the older people and, on the other hand for a language to stay alive it has to change, right? Is that, so, if people are changing the language some, it's because it's still a living language…]

I don't know — there are certain things that we don't, we don't want to change, that we don't particularly want to update because then it starts to erode our uniqueness. If you're going to speak Mohawk the way you speak English, why don't you just speak English? You can update certain things but other things you can't. Like negating a future situation — in English, you can say, "Oh, it will not snow today!" How presumptive you are! (laughter) Because, just because the sky is blue, but there's a cloud and you know the clouds — if there's one cloud there's another cloud and another cloud and another cloud and by the end of the day we could see snow, which is all within the realm of the "will" because the "will" is in the in future. We cannot negate the future.

> [CA: So that's, so that's a cultural attitude that shows up in the grammar of Mohawk? That you don't use negation with the future?]

You can construct a negative future. Nobody does. Fluent speakers don't. I mean, why would you? You know, because it interferes… We have other ways of kind of getting around it right but … most people just wouldn't. You just would not say, "it will not snow." We can create what amounts to it, a negative sort of thing and we use it with the non-definite, which is like saying "it would not" or "there's a possibility that it won't" It would not… but the thing is that you cannot directly say, "it *will* not" so we go to a very fuzzy sort of a non-definite situation and we negate that. Cheating in a way but at the same time, it is an important

cultural part of the language. I mean, the fact that you have a culture that that doesn't negate the future — they deal with the future in a different sort of way — so those sorts of things, I think they have to be kept in language because they are the sort of things that add to the uniqueness of a particular language.

Word order in Mohawk. English has a set word order: subject-verb-object. Mohawk… Mohawk's word order is, is quite literally whatever comes out of your mouth. What joins it all together are pronominal prefixes and that works. But because the pronunciation of Mohawk, the pronunciation of a word in Mohawk is set; however, due to the situation in which that word may occur within, within a statement or sentence, the accent on that word may shift. So okay fine, so if I say *kahiatónhsera* for "book" then the accent is on *tón*. *Kahiatónhsera*, okay fine, but if I say *kahiatonhseráke*, "on the book" that accent shifted to the penultimate syllable. So accent shifts on a word depending upon where that word occurs. English is a language blessed with one or two syllable words which actually puts English speakers in an odd situation since most of them seem to have a hard time pronouncing a word that has more than one, more than two syllables, (laughter) which makes my name really hard for them, "Oh, Kanatawakhon, oh, I can't say that!" It's worse if they see it written.

But the thing is, in Mohawk, word organization, word position is dependent on emphasis, so if I want to say, "The boy is walking on the road," what am I saying?

"The BOY is walking on the road?" "*raksá:'a ire ohaháke*".

or am I saying,

"The boy is WALKING on the road"? "*ire raksá:'a ohaháke*".

Or am I saying,

"The boy is walking on the ROAD"? "*ohaháke ire raksá:'a*".

So I shift my words around, there's actually six arrangements of that, the three words and it's all depending on, on emphasis. Also dependent upon if you're answering a question. Because, "What did you buy?" "A COAT I bought." Because the question *what* is asking, is asking for information which is then placed first which puts it in an emphasized position. That's a very important part of the uniqueness of a language. So there are three very unique things with the language that we don't want to, we can't lose by modernizing it or contemporizing it. The language is set.

The culture that goes with the language … if you stop using a stone axe then eventually the word for stone axe is going to disappear unless for some reason … And then some vocabulary we've created in the past that we've carried through into the future like *oháhsera*, "a light" now is used primarily in reference to artificial lighting but originally it referred to something that looked very much like this bone *oháhsa* with the *–ra* suffix so then *oháhsera* just kind of gives the impression or gives the appearance of this particular bone and if you look at that bone and you look like a candle — yeah — so the thing is so we called the candles *oháhsera*, then lamps showed up. Well, more or less the same shape, *oháhsera*. Then lights, lamps, you know, living room lamps and stuff showed up, okay, *oháhsera*. Nowadays *oháhsera* refers to anything that throws artificial light, you know, ceiling lights, wall lights, the whole bit. So that is a word that has followed through time because even though we had your basic application but the shape kept changing.

[CA: That's a natural semantic drift that happens in most languages…]

Yeah.

11.6: Creating Materials for Teaching Mohawk

Dr. Kanatawakhon-Maracle has developed his Mohawk textbooks and exercises over his many years of teaching Mohawk, but when he started teaching, there were very few books or materials available. In this unit, we talk about the kind of linguistics work that can be helpful in creating textbooks and other teaching materials.



A YouTube element has been excluded from this version of the text. You can view it online here: https://ecampusontario.pressbooks.pub/essentialsoflinguistics/?p=231

Video Script

Over the years I've been teaching Mohawk since '91 … '90-91 and I wanted to, I initially taught the course here, got the opportunity to teach the course because I wanted to see if the text material that I had developed for a language course would actually work. So I had developed a textbook and we used it the first year in that language course — mmmyeah, it did — as I modified it and I did things to it. That one sitting there that's the most recent within the last five years. There is an audio that goes with that on a USB stick. That's just the teaching text; there's another one that's called Supplements and it's divided into ten, ten supplement areas, where you've got everything about numbers, everything about locations, everything about… And it's equally as thick as that…

And then the band council back home, they finally got the opportunity to offer the Mohawk language in the public school there, so they wanted me to come home and teach it because I was quite literally the youngest speaker there and we didn't have a lot of old folks in the community to draw on. So I said okay fine, I'll, well I went back home and of course they said, "Okay there's, here's the Eastern school, here's the Central School, here's the Western school and then here's the main school one, Grades 1, Grade 2, Grade 3 and then 4 to 8 and I drove to each one every day for a half an hour, about a half an hour of language in each one, sometimes 40 minutes. So my first year of teaching was Kindergarten to Grade One — Kindergarten to Grade 8, you know of course having to deal with an attitude all the way through, worst at the 7/8 level because they started to be a lot more like their parents, and a lot more annoying. And then your little guys you know, just soaked it all up and were a lot of fun.

But then, the band council says well here's, here's your job, here's where you're teaching, and here's a hundred dollars a week. (laughter) No materials whatsoever, so I bought, I had to buy any materials that I needed for flashcards, for doing things within the class to help the kids learn and that sort of thing but one thing that there wasn't was a textbook. There was, there was no available materials that they were using and that was pretty much everywhere, so you pretty much had to develop your own material so I started doing more and I got thinking well the language is a lot more than just words. And there are a lot of words that seem to be very much the same.

I taught for five years and about the fourth year came across this book published by Günther Michelson called *A Thousand Words of Mohawk* and it was all about the roots. And I bought a copy of this thing and I started looking at it, "Oh, wow, this makes so much sense." So then I started, well maybe that is the better way to teach the language course.

[CA: So he had done the linguistics research to assemble the roots?]

Yeah, he was a linguist himself and of course, a lot of the linguistic work done on Iroquoian languages at the time was for the most part unreadable. (laughter) I didn't have the education to deal with all that sort of weird and wonderful vocabulary. If I got a book, I

had some linguistic stuff on the language, but as long as it provided enough examples that I could, then I could figure out what they were talking about … but … I really needed to have the examples. So I started doing his stuff and then gradually working this into, to doing the class, classroom stuff.

> [CA: So it sounds like there could be a valuable role here for people who may not have, who may not know languages, Indigenous languages but know some linguistics to work with speakers of the language to create materials?]

Oh yeah, I think, if they, and if they're going to be working with speakers they really do have to be somebody who has a sense of the grammar of the language. One of the things I learned how to do by trial and error was, learned how to ask the right question. Because speakers will tell you what comes to their mind. So we say, well what's the word for "tree"? "Oh, *kerhitáke*". Okay, eventually I learned that means "on the tree". *Kerhitákon*, eventually I learned that was "in the tree", and then, you know, they would give me all of these, *tkerhitoke*, "There's a tree standing there," and eventually I figured out that, *kérhite* was the word for "tree". Oh, yeah, yeah, you're telling us *kérhite*, yeah, that's "tree". (laughter)

But the thing is that, and when you're asking them something, you know, a question like, you know, "I trust him." You trust him for money? You trust him for what he says? You trust him for what he's doing? You trust them to get the job done? What? Because those are all different, you know?

And, and the business of using pronominals — we have a subjective, objective and transitive, and they would mix them. Now this is a problem that was happening in the, in the language programs in the schools, is because the fluent speakers were suddenly, oh Aunt Maisie there, she's a fluent speaker. Yeah, she's 85 but she can teach these kids — what a horrible thing to do to an old woman (laughter) — but anyway, she could use the money, so. But the thing is that she had, as a fluent speaker she had no sense of the grammar of the language.

> [CA: Right, didn't have the metalinguistic awareness.]

Constantly mixing categories, constantly mixing, you know, mixing things up. "How come you said, *wahahní:no* yesterday and today you said *rohahní:no* for 'he bought'?" They both kind of mean that, *wahahní:no*, "he just bought it", *rohahní:no*, he bought it, but quite a while ago".

> [CA: Yeah, that's something that my students in, in first-year linguistics struggle with making this, this unconscious implicit knowledge about how their language works and making that explicit. It's a real challenge. Whatever, I mean, we mostly do it in English but whatever your native language is, it's hard to become conscious…]

Yeah, so learning – learning to ask the right question, you know and, even when, when doing a sentence, you really have to pay attention to, to how they're organizing the sentence, how they're putting it together, and even though when they would say things, I would, "yeah, yeah, I know". I have a sense of what they were saying, but (laughter), it just, sometimes it was so confusing, sometimes very frustrating, sometimes you would ask three or four different speakers the same thing and they would all tell you something different. Is it because there are four ways to say the same thing or is it not really the same thing but simply refers to similar situations?

Now, I mean, that, that textbook there is all about the grammar of the language — what you use where, how you organize it, what you say when, and stuff.

> [CA: And it's over your years of experience that you've assembled…]

Yeah. Over the years I've written five different language learning textbooks complete with, with exercises, drills and all the sort of stuff. That also has a book of exercises and drills to go with it. The difference is that is on, on audio, so it's … you can, you'll find the exact same textbook on screen which you can highlight the audio and get a pronunciation.

11.7: Speaking Mohawk and Reconciliation

In this unit, Dr. Kanatawakhon-Maracle shares his view that language will play a vital role in reconciliation efforts, and talks about some of the challenges of maintaining a language when English is so dominant in Canadian society.



A YouTube element has been excluded from this version of the text. You can view it online here: ecampusontario.pressbooks.pub/essentialsoflinguistics/?p=233

Video Script

> [CA: I mean I was thinking about your students, like, are, are they going to speak Mohawk to their kids when they have kids, do you think?]

I think it's really up to, up to the student, I mean, they may have thought you know learning the language is difficult. Finding a compatible partner who also speaks the language is going to be the real test. And some of them have, have found partners who, and they have raised kids, they're raising kids together.

> [CA: So are there kids who are growing up who are learning to speak it as they're growing up?]

Yeah.

> [CA: That's starting to happen more?]

Yeah.

People don't realize that learning language is a lifelong… I, every now and then I'll run across vocabulary — oh yeah, wow this word — and then just … learning new vocabulary, words I hadn't heard before or words that I'd heard but I didn't have time to figure out the context and so, always in a state of language learning you know even after you're a speaker.

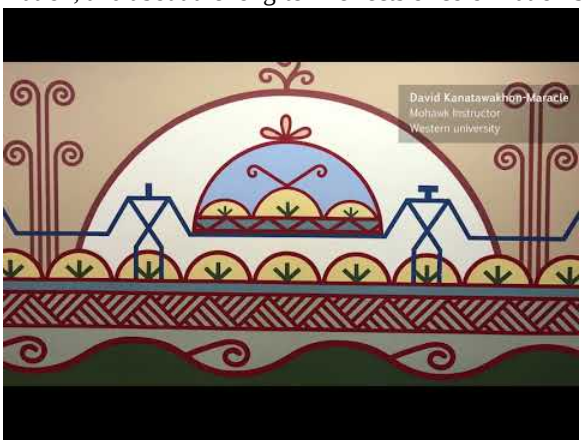
We need language. I don't know how we function without language. And nowadays with Native people you know, so much of this, this reconciliation thing going on and that sort of thing. Years ago in my home community, a lot of farmers that lived around the territory also spoke Mohawk. Very minimal in a way and stuff like that because they hired a lot of people from the territory to work on their farms. So they learned Mohawk. They learned it to a degree — you could go into stores in Deseronto and shopkeepers would, you know, would deal with, with the people in Mohawk. Now, it was Mohawk that would be related to the whole buying and selling and this sort of thing that but they did that. Now, to me, that's an aspect of reconciliation. That's where two groups have reconciled with each other — okay you're there, you speak your language but I will learn to speak with you mostly because I want your money — and … we, you know, we'll speak your language because we need your goods. I mean there's always a give and take on any, any two groups that have reconciled with each other but I think at the same time, too, when people take time to learn your language, they do have a certain respect.

> [CA: That's what I was thinking — it certainly shows respect, that I value interacting with you enough to do it in your language.]

Yeah, and the ones that want to interact more, learn more of the language.

11.8: The Future of Indigenous Languages in Canada

In this unit, Dr. Kanatawakhon-Maracle speaks eloquently about how vital each Indigenous language is to the identity of each First Nation, and about the long-term effects of colonization by the English and the French.



A YouTube element has been excluded from this version of the text. You can view it online here: https://ecampusontario.pressbooks.pub/essentialsoflinguistics/?p=235

Video Script

Canada is a bilingual country … and I think if Canada learns to extend itself, we'll start including more and more Aboriginal languages. I think Canada is, would be better to tout itself as a multilingual country. Because I think when doing that, even if they, if their definition of multilingualism is, is the two founding languages and then the Indigenous languages, you're still looking at you know like fifty-five languages. And then because the difference, I think too, Native people have to be included in all that because we were here when English and French showed up. Okay, English and French showed up and they created the present-day institutions and stuff like that, okay fine. Everybody else who has come to this country basically has read the brochure and understood that English or French are the languages, therefore come to this country understanding that, okay I'm going to have to learn English or French because that's how the company is organized, country is organized. Or if maybe I'll go learn an Indigenous language as well. But the Indigenous languages have to be at the table.

> [CA: The English and French arrived and didn't say oh well we're gonna have to learn the language that people speak — they said we're here, now you're gonna speak our language.]

Yeah, but you know initially they did learn our languages to deal with us because they didn't have much choice. We had what they didn't have and when we got to a point where we no longer had what they wanted, and of course, they wanted the land which meant pushing us off anyway, so the respect for the languages and stuff, kind of went out the door. Then it became well everybody here speaks English only. … I find that we need we need to have the languages. I think that gives us a greater sense of who we are — the language!

And, and the thing is that for, for Native people in this country we have spent so many years under the colonial thumb and so many years being convinced that our own languages and our traditions and everything that's about us is inferior or not as good as … And the thing that I've found is that if you're a Native person you can work your butt off to become as much like you know the non-native Canadian; at the end of the day your skin is still brown and that's not going to change. If I focus on speaking Mohawk then in the process of learning my language I'm also learning Mohawk culture and what it is to be a Mohawk person and that's, I think is something that is very important. We've gotten into the habit of being Indians or Natives or Aboriginals or Indigenous. Nowadays the word's 'Indigenous'. I think I keep telling my students, I said you know, I said, when I was born I was born an Indian but then I became a Native and then I became Aboriginal and then I became First Nations and now I'm Indigenous, yay! You know, Indigenous is the word of the 21st century and I'm sure they'll find another one, but the word I would really like them to find and stick to is Mohawk, Oneida, Ojibwe, Chippewa. Know us by our nationalities, know us by our distinct cultures, know us by what makes us unique in the world.

Index

A

Assimilation (Linguistics)
3.5: Articulatory Processes- Assimilation

P

phoneme
4.1: Phonemes and Contrast

Index

A

Assimilation (Linguistics)
- 3.5: Articulatory Processes- Assimilation

P

phoneme
- 4.1: Phonemes and Contrast

Glossary

Sample Word 1 | Sample Definition 1

Detailed Licensing

Overview

Title: Essentials of Linguistics 1e (Anderson)

Webpages: 111

All licenses found:

- CC BY-SA 4.0: 91% (101 pages)
- Undeclared: 9% (10 pages)

By Page

- Essentials of Linguistics 1e (Anderson) - *CC BY-SA 4.0*
  - Front Matter - *Undeclared*
    - TitlePage - *Undeclared*
    - InfoPage - *Undeclared*
    - Table of Contents - *Undeclared*
    - Licensing - *Undeclared*
  - 1: Thinking Like a Linguist - *CC BY-SA 4.0*
    - 1.1: Linguistics is Science - *CC BY-SA 4.0*
    - 1.2: Mental Grammar - *CC BY-SA 4.0*
    - 1.3: Creativity and Generativity - *CC BY-SA 4.0*
    - 1.4: Fundamental Properties of Language - *CC BY-SA 4.0*
    - 1.5: Practice Time - *CC BY-SA 4.0*
    - 1.6: Summary - *CC BY-SA 4.0*
  - 2: Producing Speech Sounds - *CC BY-SA 4.0*
    - 2.1: Practice Time - *CC BY-SA 4.0*
    - 2.2: Summary - *CC BY-SA 4.0*
    - 2.3: Chapter 3- Transcribing Speech Sounds - *CC BY-SA 4.0*
    - 2.4: How Humans Produce Speech - *CC BY-SA 4.0*
    - 2.5: Practice Time - *CC BY-SA 4.0*
    - 2.6: Summary - *CC BY-SA 4.0*
    - 2.7: Articulators - *CC BY-SA 4.0*
    - 2.8: Describing Speech Sounds- the IPA - *CC BY-SA 4.0*
    - 2.9: 2.4- IPA symbols and speech sounds - *CC BY-SA 4.0*
    - 2.10: Sonority, Consonants, and Vowels - *CC BY-SA 4.0*
    - 2.11: Classifying Consonants - *CC BY-SA 4.0*
    - 2.12: Classifying Vowels - *CC BY-SA 4.0*
    - 2.13: Diphthongs - *CC BY-SA 4.0*
    - 2.14: Various Accents of English - *CC BY-SA 4.0*
  - 3: Speech Sounds in the Mind - *CC BY-SA 4.0*
    - 3.1: Broad and Narrow Transcription - *CC BY-SA 4.0*
    - 3.2: IPA for Canadian English - *CC BY-SA 4.0*
    - 3.3: Syllabic Consonants - *CC BY-SA 4.0*
    - 3.4: Aspirated Stops in English - *CC BY-SA 4.0*
    - 3.5: Articulatory Processes- Assimilation - *CC BY-SA 4.0*
    - 3.6: Other Articulatory Processes - *CC BY-SA 4.0*
    - 3.7: Practice Time - *CC BY-SA 4.0*
    - 3.8: Summary - *CC BY-SA 4.0*
    - 3.9: Suprasegmentals - *CC BY-SA 4.0*
    - 3.10: Transcribing Casual Speech - *CC BY-SA 4.0*
  - 4: Psycholinguistics of Learning Sounds - *CC BY-SA 4.0*
    - 4.1: Phonemes and Contrast - *CC BY-SA 4.0*
    - 4.2: Allophones and Predictable Variation - *CC BY-SA 4.0*
    - 4.3: Phonetic Segments and Features - *CC BY-SA 4.0*
    - 4.4: Practice Time - *CC BY-SA 4.0*
    - 4.5: Natural Classes - *CC BY-SA 4.0*
    - 4.6: Summary - *CC BY-SA 4.0*
    - 4.7: Phonological Derivations - *CC BY-SA 4.0*
  - 5: Word Forms - *CC BY-SA 4.0*
    - 5.1: How Babies Learn the Phoneme Categories of Their Language - *CC BY-SA 4.0*
    - 5.2: How Adults Learn the Phoneme Categories in a New Language - *CC BY-SA 4.0*
    - 5.3: Practice Time - *CC BY-SA 4.0*
    - 5.4: Summary - *CC BY-SA 4.0*
  - 6: Combining Words - *CC BY-SA 4.0*
    - 6.1: Words and Morphemes - *CC BY-SA 4.0*
    - 6.2: Allomorphs - *CC BY-SA 4.0*
    - 6.3: Inflectional Morphology - *CC BY-SA 4.0*
    - 6.4: Derivational Morphology - *CC BY-SA 4.0*
    - 6.5: Inflectional Morphology in Some Indigenous Languages - *CC BY-SA 4.0*
    - 6.6: Practice Time - *CC BY-SA 4.0*
    - 6.7: Summary - *CC BY-SA 4.0*
  - 7: Forming Sentences - *CC BY-SA 4.0*
    - 7.1: Practice Time - *CC BY-SA 4.0*

- 7.2: Summary - *CC BY-SA 4.0*
- 7.3: Nouns, Verbs and Adjectives- Open Class Categories - *CC BY-SA 4.0*
- 7.4: Compound Words - *CC BY-SA 4.0*
- 7.5: Closed Class Categories (Function Words) - *CC BY-SA 4.0*
- 7.6: Auxiliaries - *CC BY-SA 4.0*
- 7.7: Neurolinguistics- Syntactic Category Differences in the Brain - *CC BY-SA 4.0*

8: Sentence Structure and Meaning - *CC BY-SA 4.0*

- 8.1: Wh-Movement - *CC BY-SA 4.0*
- 8.2: Do-Support - *CC BY-SA 4.0*
- 8.3: Psycholinguistics- Traces in the Mind - *CC BY-SA 4.0*
- 8.4: Tree Diagrams - *CC BY-SA 4.0*
- 8.5: X-bar Phrase Structure - *CC BY-SA 4.0*
- 8.6: Constituents - *CC BY-SA 4.0*
- 8.7: Sentences are Phrases - *CC BY-SA 4.0*
- 8.8: English Verb Forms - *CC BY-SA 4.0*
- 8.9: Practice Time - *CC BY-SA 4.0*
- 8.10: Subcategories - *CC BY-SA 4.0*
- 8.11: Grammatical Roles - *CC BY-SA 4.0*
- 8.12: Summary - *CC BY-SA 4.0*
- 8.13: Adjuncts - *CC BY-SA 4.0*
- 8.14: Move - *CC BY-SA 4.0*

9: Word Meanings - *CC BY-SA 4.0*

- 9.1: Ambiguity - *CC BY-SA 4.0*
- 9.2: Events, Participants, and Thematic Roles - *CC BY-SA 4.0*
- 9.3: Thematic Roles and Passive Sentences - *CC BY-SA 4.0*
- 9.4: Neurolinguistics- Using EEG to Investigate Syntax and Semantics - *CC BY-SA 4.0*
- 9.5: Practice Time - *CC BY-SA 4.0*
- 9.6: Neurolinguistics and Second Language Learning - *CC BY-SA 4.0*
- 9.7: Summary - *CC BY-SA 4.0*

10: Indigenous Languages - *CC BY-SA 4.0*

- 10.1: Elements of Word Meaning- Intensions and Extensions - *CC BY-SA 4.0*
- 10.2: Intensions in the Mind - *CC BY-SA 4.0*
- 10.3: Psycholinguistics of Word Meanings - *CC BY-SA 4.0*
- 10.4: Practice Time - *CC BY-SA 4.0*
- 10.5: Summary - *CC BY-SA 4.0*

11: Back Matter Tests - *CC BY-SA 4.0*

- 11.1: Indigenous Languages and the Legacy of Residential Schools - *CC BY-SA 4.0*
- 11.2: Testing Keys - *CC BY-SA 4.0*
- 11.3: Preserving Mohawk - *CC BY-SA 4.0*
- 11.4: Learning Mohawk - *CC BY-SA 4.0*
- 11.5: Mohawk Culture and Language - *CC BY-SA 4.0*
- 11.6: Creating Materials for Teaching Mohawk - *CC BY-SA 4.0*
- 11.7: Speaking Mohawk and Reconciliation - *CC BY-SA 4.0*
- 11.8: The Future of Indigenous Languages in Canada - *CC BY-SA 4.0*

Back Matter - *Undeclared*

- Index - *Undeclared*
- Index - *Undeclared*
- Glossary - *Undeclared*
- Detailed Licensing - *Undeclared*