

# Introduction to Linguistics

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## Course Overview

Linguistics is the scientific study of language. While language has been a topic of inquiry for thousands of years, what we can recognize as the contemporary approach to linguistics came into existence in the 20th Century. According to this approach, linguistics is a branch of psychology. That is, we study language as a capacity of the mind. One way to put the target question of linguistics is “What does one know when one knows a language?”. This question makes explicit the way in which we are interested in something psychological: it asks about *knowledge*, a mental state. The aim of this course is to provide students with a taste of what linguistic science involves: how linguists have gone about answering this question, and some of the answers they have given.

Of course, what most people will think upon hearing this question is: surely to know a language there are many, many things one has to know! That is completely correct. For this reason, linguistic science has split into various sub-disciplines, each focusing on a particular aspect of linguistic knowledge. During the first half of this course, we will look at these different sub-disciplines, with an eye to building up a catalogue of the kinds of linguistic phenomena linguistics aims to uncover, the strategies used in uncovering them, and the results that have so far been uncovered. We will look at the scientific study of the sounds, words, structures, meaning, and use of language.

Once we have become competent in these basic tools for analyzing these aspects of language, in the second half of the course we will look at ways of applying this knowledge to a variety of other problems clustering around language. We will spend some time looking at how this linguistic knowledge is *acquired*. It is a remarkable fact that, barring extreme pathology or environment, all human beings acquire mastery in at least one natural language. This fact calls for explanation, and we will focus on the two primary traditions in explaining this: nativists, who argue that natural language is provided by our innate biology, and empiricists, who argue that we learn languages by picking up on linguistic patterns in our environment. We will then look at work from psychology and neuroscience which aims to determine how this knowledge is stored, processed, and used in the mind/brain. We will look then at one of the primary challenges to the approach to language we have been assuming. All the work in the first half of the course aimed to explicate linguistic capacity with reference to linguistic *rules*. These approaches aim to break language down to its simplest parts, and then explain complex linguistic structures with reference to rules for combining these simple parts. ‘Constructionism’ reverses this approach, treating these apparently complex constructions as themselves basic. We will then turn to the practical problems involved in creating machines which are able to analyze, interpret, and engage with human language. We close the course with a look at the variation in the world’s languages, and the ways in which such variation is relevant to social and political issues.

## Reading Schedule

We will be using Fromkin, Roberts, and Hyam’s *An Introduction to Language* (FRH) as our primary textbook, and so you will need to find yourselves a copy of this book. This textbook will be supplemented by a variety of other readings, which will be made available on the course website.

### Week 1: Introduction

- FRH Chapter 1

This week we will introduce the nature of linguistic science. In particular, we will identify our target as understanding some aspect of human psychology. The crucial, and perhaps unique, feature of

natural language is that it appears to allow finite human beings to produce and interpret infinitely many expressions. This fact will suggest certain, rule-based, ways of approaching the subject. We will also discuss the difference between linguistics as a *descriptive* science, and certain *prescriptive* approaches.

## **Week 2: Phonetics- The Study of Sounds**

- FRH Chapter 5

When confronting a complex system, powerful methods for characterizing and taxonomizing it are necessary. This is as true in the study of language as ever. This week we will introduce a precise tool for describing the *sounds* of a language: the International Phonetic Alphabet (IPA). We will then look at some ways of characterizing languages using this system. We will begin a discussion of the ways of relating these sounds to the human systems which produce them, introducing what is called ‘articulatory phonetics’.

## **Week 3: Phonology- The Study of Sound Patterns**

- FRH Chapter 6

Once we have acquired the ability to precisely characterize the sounds of a language, we will look at how these sounds are put together. The branch of linguistics known as ‘phonology’ studies the surprising ways in which languages place constraints on the combination of sounds. For example, as English speakers, we can recognize that ‘spot’, but not ‘stlop’, is a possible English word. These patterns of possible and impossible sounds display a significant degree of generality, and we will look at how to identify, describe, and explain them.

## **Week 4: Morphology- The Study of Words**

- FRH Chapter 2

Linguistic expressions are, of course, not merely strings of sounds. Most expressions are formed out of *words*. Contrary to certain intuitions, words are not, in general, simply arbitrary associations between sounds and meanings. Many words have substantial degrees of explicable internal structure. It is not an accident that ‘running’ is the present participle of ‘runs’, or that ‘quickly’ is the adverbial form of ‘quick’. We will look at this phenomenon of word-internal structure and composition.

## **Week 5: Syntax I- Putting Words Together**

- FRH Chapter 3

Now that we have looked at the basic parts of language, sounds and words, we can start putting them together. The study of the ways that words combine is called ‘syntax’. Again, there is strong reason to think that complex expressions, such as sentences, are not merely series of words put in a row. Instead, it appears that sentences involve significant *hierarchical* structure, with words in the sentence exhibiting differential degrees of ‘relatedness’. For example, in the sentence “the dog chased a cat”, ‘the’ and ‘dog’ seem to be more closely related to one another than either are to the word ‘cat’. We will look at some ways of making this kind of intuition more explicit, focusing on what linguists call ‘constituency tests’. We will also look at the basic set of rules that are used to form such hierarchical structures.

## **Week 6: Syntax 2- Transformations**

- Kracht, M. *An Introduction to Linguistics* (Lecture 11)

One of the great breakthroughs in the history of syntax was the realization that sentences are not merely constructed from words once and for all. Instead, after the rules for combining words to make larger expressions have applied, language allows the operation of further rules on these structures, which can re-arrange the way that the sentences appear. This leads to a variety of examples in which it appears that the same thing is being expressed by different sentences, but in different ways. For example, the sentence “Juan was kissed by Abdul” seems, in some deep sense, to be closely related to the sentence “Abdul kissed Juan”. Syntactic theory can explain this relation by claiming that both sentences are formed in the same way, using the same words, but that some further process has modified this structure so as to create the former sentence ‘out of’ the latter. Such additional structure-modifying operations are called ‘transformations’, and we will look at the ways in which introducing transformations can simplify and enhance syntactic theory.

### Week 7: Semantics- Making Meanings

- Heim, I. and Kratzer, A. *Semantics in Generative Grammar* (Chapters 1 and 2)
- Sauerland, U. and von Stechow, A. *The Syntax-Semantics Interface*

Ultimately, it has seemed to many that the *point* of language is to *mean* things. Now that we have our theories of what languages sound like, and how words are put together, we can begin the project of attaching meanings to these linguistic objects. This is the domain of semantics. While ‘meaning’ is a notoriously hazy notion, it appears to be very closely tied to another, better understood, notion: truth. It is often suggested that knowing what some sentence means involves knowing the conditions under which it is true. We will develop this picture, looking at ways of deriving ‘truth-conditions’ for sentences, and looking at the ways that such an approach suggests more basic meanings for non-sentential expressions, like words. This focus on truth will enable us to explain other sorts of property, such as ambiguity, the property of having multiple meanings, and entailment, a relation that holds between sentences when the truth of one guarantees the truth of the other. We will then apply our tools of truth-conditional semantic theorizing to some problematic examples involving the relationship between syntax and semantics.

### Week 8: Pragmatics- Putting Meanings to Use

- Lycan, W. *Philosophy of Language: A Contemporary Introduction* (Chapters 13 and 14)

A reasonable response to our introduction of semantic theory as the theory of truth is: but surely there is much more to meaning than that! We use language to do all kinds of things other than express (hopefully) true thoughts. This week we turn to the theory of *pragmatics*, which focuses on precisely these uses. We will look at seminal work by Paul Grice on the way that sentences are used to convey more than what they literally mean. We will also look at other kinds of meaning beyond truth-conditions, such as presupposition, emotive content, and metaphor.

### Week 9: Language Acquisition I- Linguistic Nativism

- Pietroski, P. and Crain, S. *The Language Faculty*
- Petitto, L. *How the Brain Begets Language*

We turn now from general aspects of our linguistic systems to larger issues surrounding language. This week we will begin to look at theories of how human beings *acquire* languages, focusing on the surprising, but quite compelling, view that languages are not strictly *learned*, but instead *develop*, in the way that biological organs such as the heart do. We will look at the famous ‘Poverty of the Stimulus’ argument, which claims that the linguistic rules that language learners acquire are not usually exemplified by the language that learners encounter, and concludes from this that this knowledge must come from the learner themselves. We will then make this case stronger by looking at the surprising linguistic behavior of deaf infants who, despite not being exposed to language at all, are compelled to behave in language-specific ways.

### Week 10: Language Acquisition II- Linguistic Empiricism

- Hinton, G. *How Neural Networks Learn from Experience*
- Joannise, L. and McClelland, J. *Connectionist Perspectives on Language Learning, Representation and Processing*

This week we will look at prominent responses to the linguistic ‘nativist’ view motivated last week. In particular, we will look at some kinds of complex systems which are alleged to be able to explain human language acquisition without recourse to positing innate linguistic knowledge. ‘Neural networks’, large scale collections of interacting nodes, display surprising capacities to learn on the basis of experience, and it is argued that they provide all the tools needed to learn a language.

### Week 11: Psycholinguistics and Neurolinguistics- Language, the Mind, and the Brain

- FRH Chapter 10
- *Language Files* Chapter 9

In the project of explaining language as an aspect of psychology, it is important to connect up this theoretical work on the nature of language with work on the way that language can be stored, acquired, and processed by a psychological or neurological system. We will look at descriptions of the parts of the brain used in human linguistic behavior, as well as some important results involving

ways that our linguistic capacities can go wrong, such as certain kinds of aphasia (selective failures with respect to one mental capacity while others remain intact), and certain difficulties that humans have in processing seemingly well-formed sentences. Garden paths, production errors, brain areas, aphasia

### **Week 12: Construction Grammars**

- Goldberg, A. *The Nature of Generalization in Language*
- Tomasello, M. *Constructing a Language* (Excerpts)
- Jackendoff, R. *Representations and Rules in Language*

Throughout this course, we have assumed a picture of language focusing on linguistic *rules*: the basic constituents of language are simple (words), and the bulk of linguistic theory involves explaining how these simple expressions can, and cannot, combine with one another. This week we look at a radically different approach, constructionism, which upturns this picture. Constructionists view language as itself built out of syntactically and semantic complex items. We look at both methodological and empirical arguments for this rival perspective.

### **Week 13: Computational Linguistics- Talking to/with Computers**

- *Language Files* Chapter 16
- Gries, S. *What is Corpus Linguistics*

Linguistic theory should be able to tell us about the natural phenomenon of human language, but ideally it should also enable us to create beneficial technologies. This week we look at the prospects of producing computers and computational systems that are capable of recognizing, analyzing, and responding to human language. This work will be hugely important for technologies such as search engines, virtual assistants, translation software, and speech-to-text programs, among many others. As well as the general picture of what kinds of issues computational linguists aim to solve, we will look at one approach, corpus linguistics, which aims to integrate ‘big-data’ techniques with traditional approaches to linguistic theory.

### **Week 14: Comparative Linguistics- Languages Across the World**

- Evans, N. and Levinson, S. *The Myth of Language Universals*
- McMahon, A. and McMahon, R. *Genetics, Historical Linguistics and Language Variation*

One of the central difficulties within linguistics is that well-confirmed generalizations are difficult to come by given the sheer variety in the world’s languages. This week aims to convey a sense of just how much different languages vary, and how linguists aim to provide some order to this mass of data, utilizing tools from both the historical, anthropological, and biological sciences.

### **Week 15: Sociolinguistics- Language and Culture**

- Milroy, J. and Milroy, L. *Linguistic Change, Social Network and Speaker Innovation*
- Wheeler, R. and Thomas, J. *And “Still” the Children Suffer: The Dilemma of Standard English, Social Justice, and Social Access*

We close the course with a look at how language and society interact. Milroy and Milroy provide a tool for modeling the ways in which societal networks promote and moderate linguistic change. Wheeler and Thomas discuss a case-study of how the language we speak can interact with social and political power structures. They focus on the discussion of African American Vernacular English (AAVE), previously known as ‘ebonics’, in the classroom. Social policy and bad linguistics have led to discriminatory practices in education, indicating how the issues we have discussed in this class can have important real-world effects.