

# Psych 150/ Ling 155: Psychology of Language

## Lecture 1 Introduction

## Administrivia

### Instructors:

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[greg.hickok@uci.edu](mailto:greg.hickok@uci.edu)

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## Administrivia

Teaching Assistant (office hours TBD)

Lawrence Phillips, Department of Cognitive Sciences

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Office Hours: TBD in SBSG 2221



## Administrivia

[Message board](#) (accessible via the website and EEE)

<https://eee.uci.edu/toolbox/messageboard/m16667/>

Used to facilitate communication about the course administrivia and content. Please go there first to see if someone has already asked your question before emailing the TAs or instructors. It may be that your question is already answered there, and this will allow you to get a quicker answer to your question.

### Psych of Lang - Spring 2015

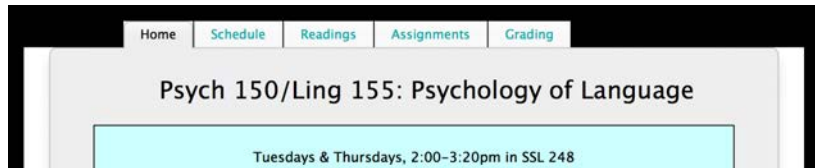
Forum Name & Info	Last Post	
<input type="checkbox"/> <a href="#">Administrative questions</a> Questions about administrative stuff related to the class, such as homework submissions, exam taking, etc. 1 posts in 1 threads	<a href="#">Username and password to...</a> Mar 24, 2015 at 8:44am Lisa S. Pearl <a href="mailto:lpearl@uci.edu">lpearl@uci.edu</a>	⌵ NI
<input type="checkbox"/> <a href="#">Homework questions</a> Questions about the content in the homework 0 posts in 0 threads	No last post	⌵ NI
<input type="checkbox"/> <a href="#">Review questions</a> Questions about any of the content in the review	No last post	⌵ ...

# Administrivia

Class web page:

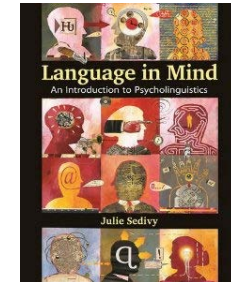
[http://www.socsci.uci.edu/~lpearl/courses/psych150\\_2015spring/index.html](http://www.socsci.uci.edu/~lpearl/courses/psych150_2015spring/index.html)

Accessible from EEE, as well. Contains overview, [schedule](#), readings, course assignment descriptions, and grading policies.



# Administrivia

Reference readings will primarily be from "Language in Mind" by Julie Sedivy



along with a few other book excerpts, articles, and video links:

Date	Topic	Notices & Assignments	Reference Material
3/31/15	<b>Introduction to the Psychology of Language</b> (pdf)  <i>Podcasts</i>	Review questions available for intro and representation  HW1 available	<ul style="list-style-type: none"> <li>• Sedivy: pp. 3-7</li> <li>• Sedivy: pp. 24-28</li> <li>• World Atlas of Language Structure</li> <li>• Sedivy: p.50</li> </ul>

# Administrivia

Some reference readings (usually articles) will require a username and password to access.

*Username = langacq*

*Password = models*

**Authentication Required**

Enter username and password for "Linguistics Readings" at <http://www.socsci.uci.edu>

User Name:

Password:

If you forget these, you can always check the message board under "Administrative Questions" to see the post about the username and password.

Thread Name & Author	Posts	Views	Last Post
<input type="checkbox"/> <a href="#">Username and password to access readings...</a> Lisa S. Pearl <small>lpearl@uci.edu</small>	1	1	March 24th 2015 at 8:44am Lisa S. Pearl <small>lpearl@uci.edu</small>

# Administrivia

## Assignments

Homework:

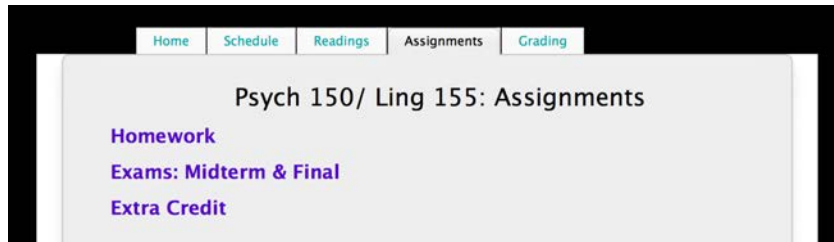
Four throughout the quarter, available through EEE. Collaboration is allowed and **highly encouraged**. In fact, take a minute to introduce yourself to some people around you who might **form a homework/study group** with. **You may turn in one assignment per group of collaborators** – just make sure the names and student IDs of all the collaborators are included in it.

# Administrivia

## Assignments

### Homework:

Late homework will be accepted according to the late policy listed in the assignments section on the class webpage. If you cannot turn in the homework on time, **take advantage of the policy to get some credit for your assignment. Seriously.**



# Administrivia

## Exams

### Midterm exam:

There will be an **online midterm exam on 4/30/15, available through EEE**. It will cover the material in weeks 1-4. Review questions will be available for each topic covered in class, and there will be a midterm review in class 4/28/15. Midterm exam questions will come from the homeworks and the review questions.

The midterm exam will be open-note, but non-collaborative.

**If you are found collaborating with other classmates during the midterm exam, you will receive a 0.**

For details of the online exam policy and procedure, see the course webpage. We will also go over these during the midterm review.

# Administrivia

## Exams

### Final exam:

There will be an **online final exam on 6/11/15, available through EEE**. It will cover the material in weeks 1-10, with a strong focus on the material in weeks 6 - 10. Review questions will be available for each topic covered in class, and there will be a final exam review in class on 6/4/15. Exam questions will come from the homeworks and the review questions.

The final exam will be open-note, but non-collaborative.

**If you are found collaborating with other classmates during the final exam, you will receive a 0.**

For details of the online exam policy and procedure, see the course webpage. We will also go over these during the final review.

# Administrivia

## Grades

Homework: 50%

Midterm Exam: 20%

Final Exam: 30%

Your grades will be determined by approximately this scale:

96.50-100.00: A+	83.50-86.49: B...
93.50-96.49: A	80.00-83.49: B-
90.00-93.49: A-	76.50-79.99: C+
86.50-89.99: B+	73.50-76.49: C

## Administrivia

### Extra Credit

You can earn up to 3 percentage points of extra credit two ways. (See the class web page under the “assignments” tab for more details.)

- (1) Participate as a human subject in a language science experiment webpage (30 items = half a percentage point).
- (2) Participate as a human subject in social science experiments for up to 3 hours (half an hour = half a percentage point).

## Administrivia

### Schedule

“This is our wonderfully ambitious schedule. We usually keep to it, but it is subject to modification.”

### Topics:

Intro to Psych of Language	(3/31)	[1]
Representation	(4/2 – 4/9)	[3]
Learning	(4/14 – 4/23)	[4]
Speech Perception	(5/5 – 5/7)	[2]
Word Recognition	(5/12 – 5/14)	[2]
Sentence Processing	(5/19 – 5/21)	[2]
Speech Production	(5/26 – 5/28)	[2]
Sign Language	(6/2)	[1]

## What do scientists know about language?

### The study of language

“Language is a peculiar subject matter...We have conscious thoughts about how we use or learn language, and this can give us the illusion that the best way to understand language is through these deliberate observations. But how do you intuit your way to answering questions like these...” — Sedivy 2014, p.4

### Representation

Is your understanding of the word *blue* or *penguin* or *the* exactly the same as my understanding of it?



## What do scientists know about language?

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### Learning

When we learn language, are we doing the same kind of thing as when we learn to solve mathematical problems?

What does a baby know about language before it can speak?



## What do scientists know about language?

### The study of language

“Language is a peculiar subject matter...We have conscious thoughts about how we use or learn language, and this can give us the illusion that the best way to understand language is through these deliberate observations. But how do you intuit your way to answering questions like these...” — Sedivy 2014, p.4

### Processing

Why is it that sometimes, in the process of retrieving a word from memory, you can draw a complete blank, only to have the word pop into your mind half an hour later?



What exactly makes some sentences confusing while other sentences are easy to understand?

## What do scientists know about language?

### The study of language

“Language is a peculiar subject matter...We have conscious thoughts about how we use or learn language, and this can give us the illusion that the best way to understand language is through these deliberate observations. But how do you intuit your way to answering questions like these...” — Sedivy 2014, p.4

### Biological basis

Why is it that one person who has a stroke can lose the ability to speak in general, while another person seems to lose very specific language abilities, like the ability to understand spoken words while still being able to understand them when they're written?



## What do scientists know about language?

### The study of language — why bother?

“Despite the fact that much of the current scientific knowledge of language is riddled with degrees of uncertainty and could well turn out to be wrong, it's not nearly as likely to be wrong as the many pronouncements that people often make about language without *really* knowing much, if anything, about it...” — Sedivy 2014, p.5

### Wrong things

People speak in foreign accents because their mouth muscles aren't used to making the right sounds.

Some languages are spoken more quickly than others.

Failure to enunciate all your speech sounds is due to laziness.



## What do scientists know about language?

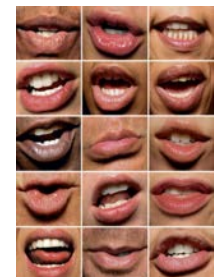
### The study of language — why bother?

“Despite the fact that much of the current scientific knowledge of language is riddled with degrees of uncertainty and could well turn out to be wrong, it's not nearly as likely to be wrong as the many pronouncements that people often make about language without *really* knowing much, if anything, about it...” — Sedivy 2014, p.5

### More wrong things

English is the hardest language to learn.

Deaf people should learn to speak and lip-read in spoken language before they learn sign language, or it will interfere with learning a real language.



## Why study psycholinguistics?

### Scientific reasons

“Most people have a decent sense of how they digest their food, but the common knowledge of many educated people today does not contain the right equipment to begin answering a question as basic as, ‘How can you understand what I’m saying?’” — Sedivy 2014, p.6



## Why study psycholinguistics?

### Scientific reasons: Language is special

“What is so special about language? Maybe nothing if you are a snail or a camphor tree. But language is paramount among the capacities that characterize humans, setting us off from even the most perfectly formed and functioning of the other beasts on earth; so, as a matter of species pride – if nothing else – **we would hold up language as a marker of our humanity and thus a focus of our scientific interest.**”

— Gleitman & Liberman 1991: xix



## Why study psycholinguistics?

### Practical reasons

“While you’re unlikely to ever become a professional language researcher, you’re *extremely* likely to use language in your daily life...even a basic understanding of how language works in the mind will provide you with tools to approach these and many, many other questions in an intelligent way.”  
— Sedivy 2014, p.6

### Some daily uses

If I sit my kid in front of the TV for an hour a day, will this help her to learn language?



Should I bother trying to learn a second language in my thirties?

## Why study psycholinguistics?

### Practical reasons

“While you’re unlikely to ever become a professional language researcher, you’re *extremely* likely to use language in your daily life...even a basic understanding of how language works in the mind will provide you with tools to approach these and many, many other questions in an intelligent way.”  
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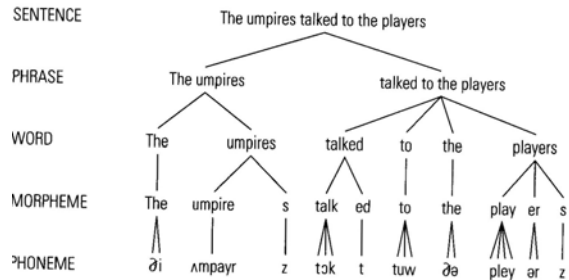
### Some more daily uses

How can I write this report so it’s easier to understand?

Why is this automated voice system so infuriating?



## Language structure



## About language

Language is a complex system of knowledge that all typically developing humans learn and use.

It includes sound structure, word structure, word meaning, sentence structure, mapping from sentence structure to meaning, unspoken rules of conversation...



## About language

Language is a complex system of knowledge that all typically developing humans learn and use.

It includes **sound structure**, word structure, word meaning, sentence structure, mapping from sentence structure to meaning, unspoken rules of conversation...



Stress pattern

go blins

Individual sounds (in IPA)

g a b l ɪ n z

## About language

Language is a complex system of knowledge that all typically developing humans learn and use.

It includes sound structure, **word structure**, word meaning, sentence structure, mapping from sentence structure to meaning, unspoken rules of conversation...



goblin (plural) = goblin + s

go blins

g a b l ɪ n z

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goblins

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g a b l i n z

Goblins like children.

## About language

Language is a complex system of knowledge that all typically developing humans learn and use.

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goblins

goblin (plural) = goblin + s

go blins

g a b l i n z

Don't goblins like children?

Goblins like children.

## Some terminology

**Phonology**: sounds and sound system of the language

g a b l i n z

go blins

**Lexicon & Lexical Semantics**: Words and associated knowledge (word forms, word meanings, etc.)

goblins =

(not koblins)



**Morphology**: system for combining units of meaning together

(goblin + [plural] = **goblins**)



## Some terminology

**Syntax:** system for combining words into sentences

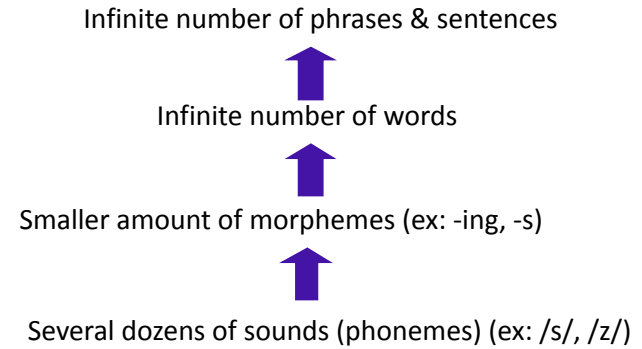
Goblins like children.



**Pragmatics:** knowledge of language use

Don't goblins like children? = surprise if the answer is 'no'  
(expectation is that the answer is 'yes')  
Use this question format to show expectation of a 'yes' answer.

## Combining units



## Phonemes

Basic perceptual units of which speech is composed: /k/, /g/, ...  
(Liberman 1970)

Units that are used to build morphemes: /k/ + /æ/ + /t/ = 'cat'

The combination is rule-governed:

In English, /s/ + /t/ + /a/ + /p/ = "stop" is okay

but

/t/ + /s/ + /a/ + /p/ = "tsop" is not okay

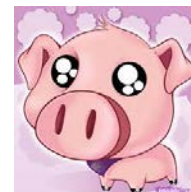


## Phonemes

Languages have a finite inventory of these units.

They are not units of meaning.

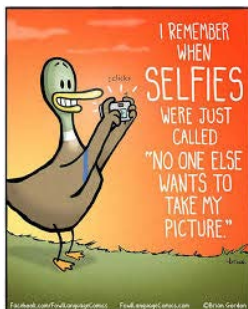
They are **contrastive**: changing a phoneme can change meaning  
(pig vs big).



## Combining units: Creativity

We are capable of combining existing **phonemes** to form new words

- “email”, “IM”, “xerox”, “blogosphere”, “interwebs”, “selfie”
- Also, usernames



## Morphemes

Morphemes are the smallest meaningful units of language

**Free morphemes** may stand alone

mail, movie, sensation, mother, gift

**Bound (usually grammatical) morphemes** cannot

-ing, -s, -ed, -er, re-

Morphemes combine to form the words of a language.

Ex: He's a regifter! (re + gift +er)

The combination is rule-governed: “Regifter” is okay but not

\*Reergift, \*Erregift, \*Ergiftre, \*Gifterre, \*giftreer.

## Combining units

We are capable of combining existing **morphemes** using different processes.

While there are usually already an infinite number of words (ex: we have a word for every number), these processes allow us to make even more words.



## Compounding

mother

grandmother

great-grandmother

great-great-grandmother

great-great-great-grandmother

...

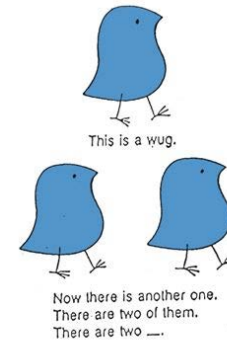


## Derivational morphemes

sensation	= noun
sensational	= adjective
sensationalize	= verb
sensationalization	= noun
sensationalizational	= adjective
sensationalizationalize	= verb

## Inflectional morphemes

### The Wug Test



- s = plural
- s = present tense, 3<sup>rd</sup> sg (he sings)
- ing = ongoing action (he's singing)

## Sentences

We are capable of combining existing morphemes/words into new sentences

*Through dangers untold and hardships unnumbered, I have fought my way here to the castle beyond the goblin city to take back the child you have stolen, for my will is as strong as yours and my kingdom is as great.*



This allows us to have an infinite number of sentences.

## Sentences

We are capable of combining existing morphemes/words into new sentences

The combination is rule-governed:

*I have fought my way here...*

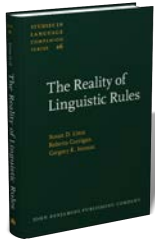
but not

*\*fought my here have way I*



## Linguistic rules

Our mental representation of language includes specific ways that linguistic units can combine together...even if we're often not explicitly aware of these **hidden rules**.



## Knowledge of language & hidden rules

You know that...

...*strop* is a possible word of English, while *stvop* isn't.



## Knowledge of language & hidden rules

You know that...

...if Jack thinks that someone saved the unicorn, and you want to ask who that someone is, you can't ask it this way:



\*"Who does Jack think that saved the unicorn?"



Instead, In English you have to say:  
"Who does Jack think saved the unicorn?"



## Knowledge of language & hidden rules

You know that...

...In "*She* ate the peach while *Sarah* was reading", *she* ≠ *Sarah*

but *she* can be *Sarah* in all of these:

*Sarah* ate the peach while *she* was reading.  
While *she* was reading, *Sarah* ate the peach.  
While *Sarah* was reading, *she* ate the peach.



## Knowledge of language & hidden rules

You know that...

...the 's' in 'cats' sounds different from the 's' in babies

cats: 's' = /s/

babies: 's' = /z/



## Knowledge of language & hidden rules

You know that...

... contracted forms like "wanna" and "gonna" can't always replace their respective full forms "want to" and "going to".

*You get to choose who you will rescue.*

"Who do you want to rescue?"

"Who do you wanna rescue?"



## Knowledge of language & hidden rules

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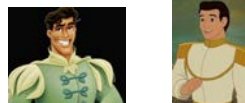
"Who do you wanna rescue?"



*You get to choose who will do the rescuing.*

"Who do you want to do the rescuing?"

\* "Who do you wanna do the rescuing?"



## Knowledge of language & hidden rules

You know that...

... contracted forms like "wanna" and "gonna" can't always replace their respective full forms "want to" and "going to".

*You get to choose who you will rescue.*

"Who are you going to rescue?"

"Who are you gonna rescue?"



## Knowledge of language & hidden rules

You know that...

... contracted forms like “**wanna**” and “**gonna**” can’t always replace their respective full forms “**want to**” and “**going to**”.

*You get to choose who you will rescue.*

“Who are you **going to** rescue?”

“Who are you **gonna** rescue?”

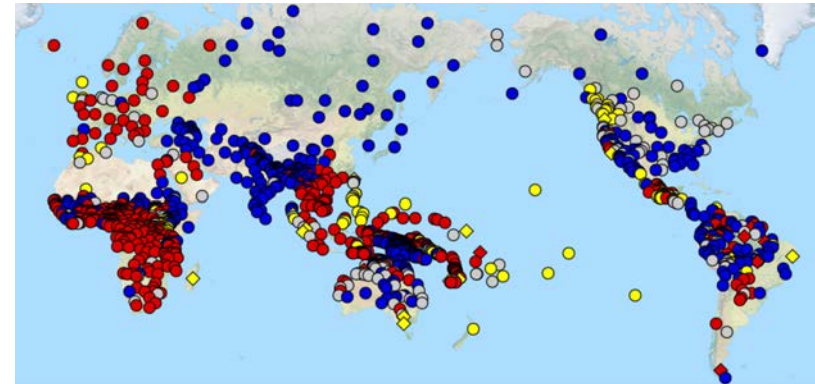


“I’m **going to** the witch’s lair to rescue her.”

\* “I’m **gonna** the witch’s lair to rescue her.”



## Linguistic unit & rule variation: Languages don’t always do things the same way



## Linguistic unit & rule variation: Languages don’t always do things the same way

wals.info: The World Atlas of Language Structures

THE WORLD ATLAS  
OF LANGUAGE STRUCTURES  
ONLINE



Home Features Chapters Languages References Authors

### Welcome to WALS Online

The World Atlas of Language Structures (WALS) is a large database of structural (phonological, grammatical, lexical) properties of languages gathered from descriptive materials (such as reference grammars) by a team of 55 authors.

## Linguistic unit & rule variation: Languages don’t always do things the same way

Let’s look at different types of linguistic units and rules...

THE WORLD ATLAS  
OF LANGUAGE STRUCTURES  
ONLINE



Home Features Chapters Languages References Authors

### Chapters

Showing 1 to 100 of 151 entries

Id	Name	Contributor
	<input type="text" value="Search"/>	

# Linguistic unit & rule variation: Languages don't always do things the same way

Let's start with phonology...

16	Weight Factors in Weight-Sensitive Stress Systems	Rob Goedemans and Harry van der Hulst	Phonology
7	Rhythm Types	Rob Goedemans and Harry van der Hulst	Phonology
18	Absence of Common Consonants	Ian Maddieson	Phonology

Home Features Chapters Languages

## Chapter Rhythm Types

by Rob Goedemans and Harry van der Hulst [cite](#)

2. Defining the values

For the languages for which we have information on rhythm, the following types are shown on the map.

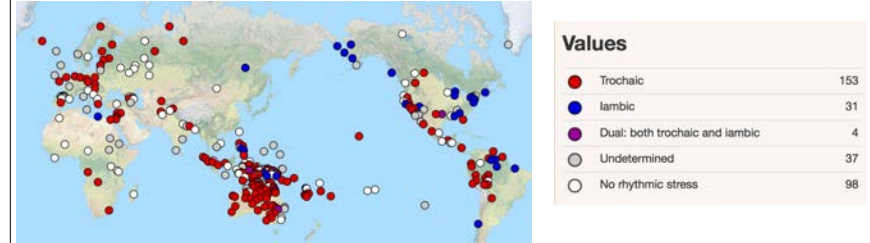
Value	Representation
● Trochaic: left-hand syllable in the foot is strong	153
● Iambic: right-hand syllable in the foot is strong	31
● Dual: system has both trochaic and iambic feet	4
○ Undetermined: no clear foot type	37
○ Absent: no rhythmic stress	98
<b>Total:</b>	<b>323</b>

gó blin  
ba llóon

This tells us that most of the world's languages that mostly use only a single rhythm pattern use the **trochaic** pattern.

# Linguistic unit & rule variation: Languages don't always do things the same way

Let's start with phonology...



Home Features Chapters Languages References Authors

## Features

A feature is a structural property of language that describes one aspect of cross-linguist maps. Most features correspond straightforwardly to chapters, but some chapters are a

17A	Rhythm Types	Rob Goedemans and Harry van der Hulst	Phonology	323
-----	--------------	---------------------------------------	-----------	-----

# Linguistic unit & rule variation: Languages don't always do things the same way

Let's start with phonology...

What value does English have?

English ● Trochaic

What about Seneca?

Seneca ● Iambic

What about Larike?

Larike ● Dual: both trochaic and iambic

Home Features Chapters Languages References Authors

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17A	Rhythm Types	Rob Goedemans and Harry van der Hulst	Phonology	323
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# Linguistic unit & rule variation: Languages don't always do things the same way

Let's look at morphology...

66	The Past Tense	Østen Dahi and Viveka Velupillai
67	The Future Tense	Østen Dahi and Viveka Velupillai
68	The Perfect	Østen Dahi and Viveka Velupillai

Home Features Chapters Languages References Authors

## Chapter The Future Tense

by Østen Dahi and Viveka Velupillai [cite](#)

2. Definition of values

For this map, only two values have been defined: languages in which there is inflections those where there is not.

Please note: A common introduction to Chapters 65, 66, 67, a:

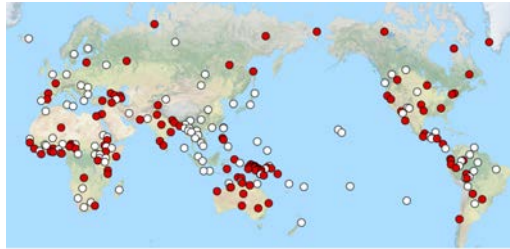
Value	Representation
● Inflectional marking of future/non-future distinction	110
○ No inflectional marking of future/non-future distinction	112
<b>Total:</b>	<b>222</b>

irá = will go

This tells us that there's a fairly even split between languages with future morphology and language without.

## Linguistic unit & rule variation: Languages don't always do things the same way

Let's look at morphology...



Values	
<span style="color: red;">●</span> Inflectional future exists	110
<span style="border: 1px solid black; border-radius: 50%; padding: 2px;">○</span> No inflectional future	112

How are the different language future morphology options distributed around the world?

Home Features Chapters Languages References Authors

### Features

A feature is a structural property of language that describes one aspect of cross-linguist maps. Most features correspond straightforwardly to chapters, but some chapters are a

67A The Future Tense

Østen Dahl and Viveka Velupillai

## Linguistic unit & rule variation: Languages don't always do things the same way

Let's look at morphology...

What value does English have?

English  No inflectional future

What about Spanish?

Spanish  Inflectional future exists

What about Japanese?

Japanese  No inflectional future

Home Features Chapters Languages References Authors

### Features

A feature is a structural property of language that describes one aspect of cross-linguist maps. Most features correspond straightforwardly to chapters, but some chapters are a

67A The Future Tense

Østen Dahl and Viveka Velupillai

## Linguistic unit & rule variation: Languages don't always do things the same way

Let's look at syntax...

81	Order of Subject, Object and Verb	Matthew S. Dryer	Word Order
82	Order of Subject and Verb	Matthew S. Dryer	Word Order
83	Order of Object and Verb	Matthew S. Dryer	Word Order

### Chapter Order of Subject and Verb

by Matthew S. Dryer [cite](#)

Values of Map 82A. Order of Subject and Verb

Value	Representation
<span style="color: blue;">●</span> Subject precedes verb (SV)	1193
<span style="color: red;">●</span> Subject follows verb (VS)	194
<span style="border: 1px solid black; border-radius: 50%; padding: 2px;">○</span> Both orders with neither order dominant	110
<b>Total:</b>	<b>1497</b>

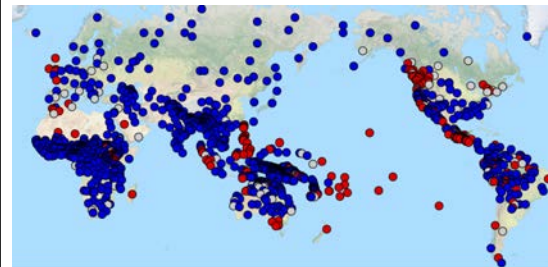
This tells us that most languages have the Subject come before the Verb...but not all do.

Jack laughs.

Laughs Jack.

## Linguistic unit & rule variation: Languages don't always do things the same way

Let's look at syntax...



Values	
<span style="color: blue;">●</span> SV	1193
<span style="color: red;">●</span> VS	194
<span style="border: 1px solid black; border-radius: 50%; padding: 2px;">○</span> No dominant order	110

How are the different Subject and Verb orders distributed around the world?

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### Features

A feature is a structural property of language that describes one aspect of cross-linguist maps. Most features correspond straightforwardly to chapters, but some chapters are a

82A Order of Subject and Verb

Matthew S. Dryer

Word Order

1497



## Linguistic unit & rule variation: Languages don't always do things the same way

Let's look at syntax...

What value does English have?

English  SV

What about Fijian?

Fijian  VS

What about Spanish?

Spanish  No dominant order

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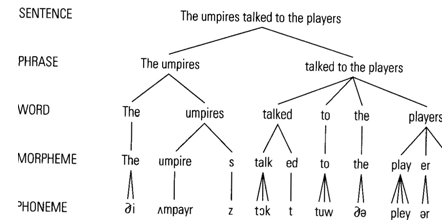
### Features

A feature is a structural property of language that describes one aspect of cross-linguist maps. Most features correspond straightforwardly to chapters, but some chapters are a

## What we still don't know about language

### Representation

- What are the structural properties of language?
- What are the optional versus obligatory aspects of language?



## What we still don't know about language

### Learning

- How are the various components of language learned?
- Why do children seem to learn better than adults?
- How specialized are our language learning abilities?



## What we still don't know about language

### Processing & Use

- What do our language-processing abilities look like?
- How do we produce and understand language, and under what conditions does this go smoothly or not-so-smoothly?



## What we still don't know about language

### Neurological Basis

- How does the brain make language representation, learning, and processing possible?
- How are language disorders implemented in the brain, and can they be fixed?



## Recap

Language science is an exciting field with many open questions.

Language is a knowledge system that has many different levels, and different linguistic units that can combine together in rule-governed ways.

Each language has its own system of combinatoric units and rules that is represented, learned, and used by its speakers.



You should be able to do up through 4 on the introductory & representation review questions and up through 2 on HW1.