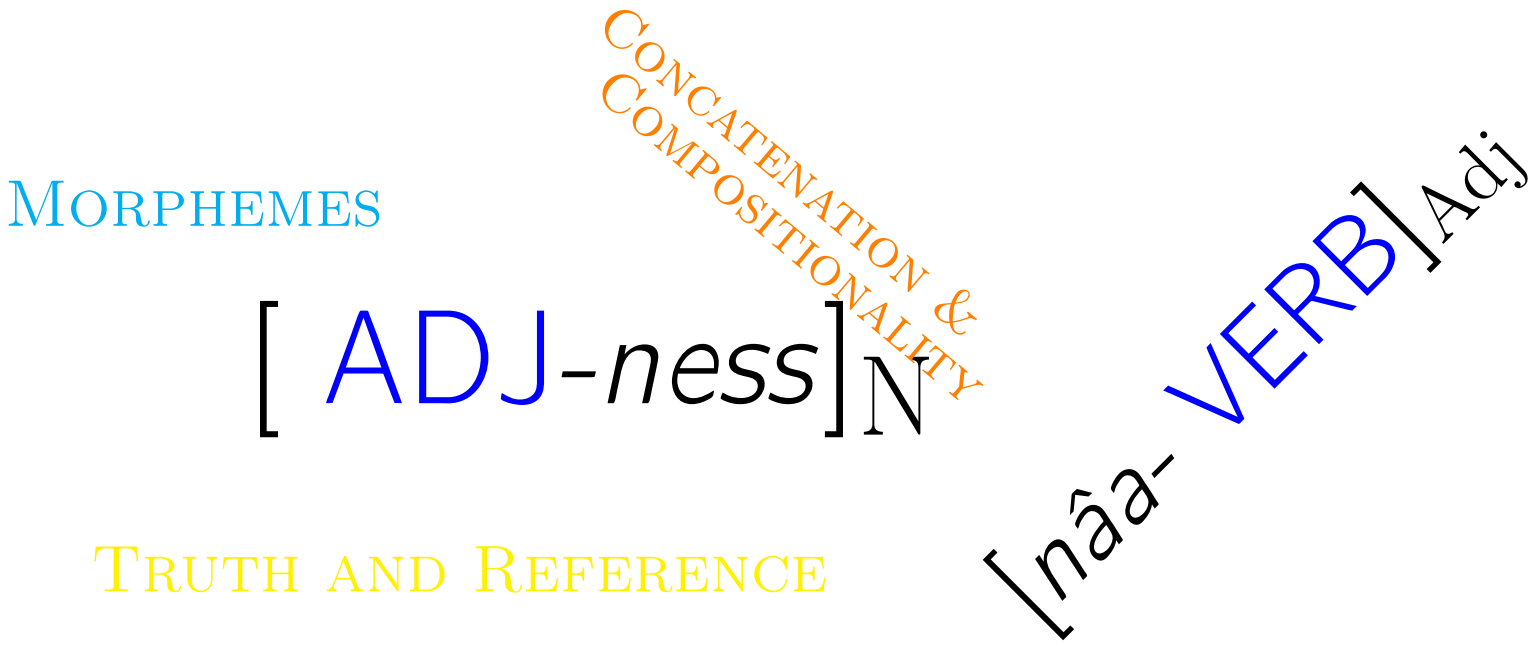

ELC 231: Introduction to Language and Linguistics

The Lexicon, Semantics & Morphology

Dr. Meagan Louie

Core Subdomains

Linguistics: The study of Language

- Phonetics
- Phonology
- Morphology
- Syntax
- Semantics
- Pragmatics

Core Subdomains: Last Week - Phonology

Linguistics: The study of Language

- Phonetics
- **Phonology**
- Morphology
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Core Subdomains: This Week - Semantics and Morphology

Linguistics: The study of Language

- Phonetics
- Phonology
- **Morphology**
- Syntax
- **Semantics**
- Pragmatics

Introducing MEANING into Language

(i) A **structured** collection of sounds — Phonetic Inventory

(ii) A repository of meaning — Semantic Ontology

(iii) **Rules about how these elements combine** (i.e., "GRAMMAR")

- sounds into complex sounds
- sound and meanings into $\langle sound, meaning \rangle$ pairs
- morphemes into words
- words into phrases and sentences
- simple morpheme meanings into complex meanings
- complex meanings with context

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Core Subdomains: Semantics & Morphology

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1 Meaning as Truth and Reference

2 Semanticity as a Design feature

3 Arbitrariness as a Design feature

4 The Principle of Compositionality

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- **Morphology:** The study of **word-formation** in language

1 The key notion of the MORPHEME & SEMANTICITY

2 CONCATENATION & COMPOSITIONALITY

3 MORPHEME CATEGORIES

  - **Distributional Categories:** roots, stems, prefixes, suffixes
  - **Lexical Categories:** N, V, Adj, P, Det

REVIEW: Hockett's Design Features & Discreteness

- The building blocks of language are

  ABSTRACT SOUND CATEGORIES called **PHONEMES**:

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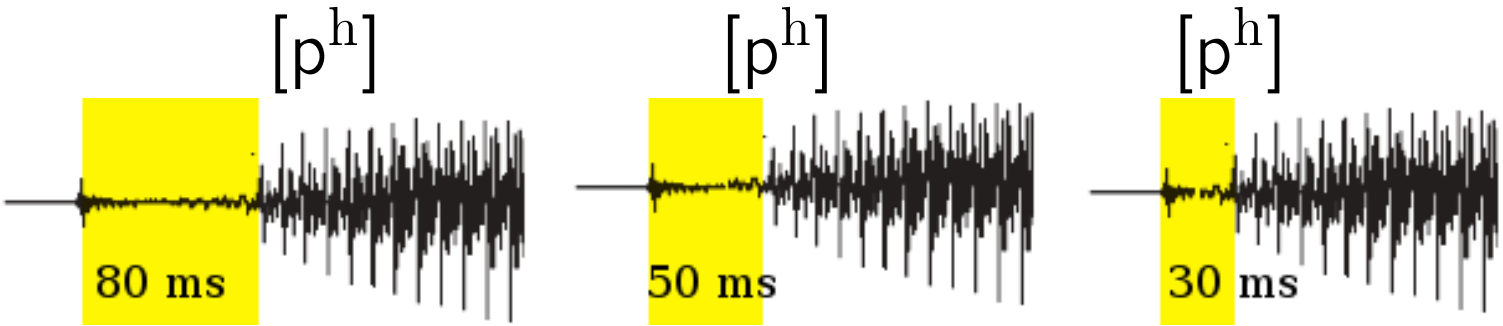
$$/\mathrm{p^h}/$$



→ Many different physical manifestations of sounds map onto

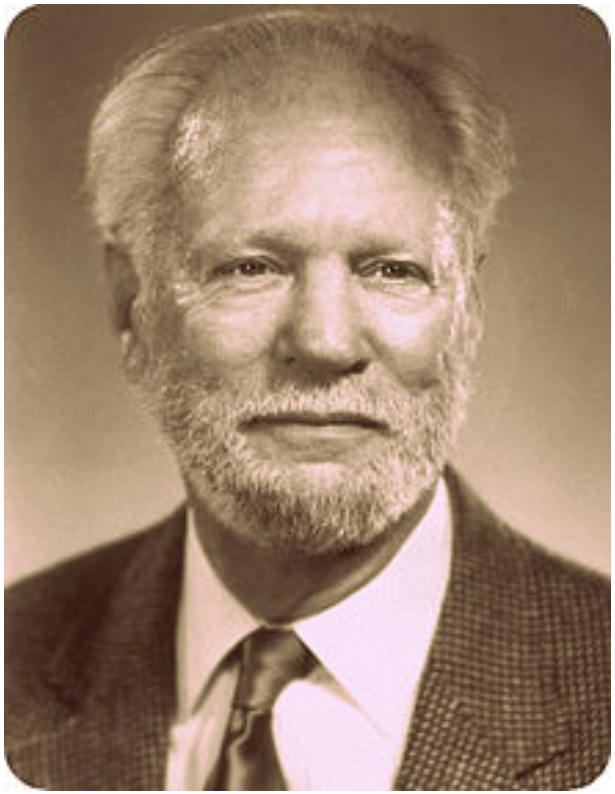
one mental representation/category of a sound

Hockett's Design Features of Language

Hockett (1959)

Q: What properties does LANGUAGE have?

i.e., what counts as a LANGUAGE (vs communication system)?



Hockett's Design Features

1. **Discreteness**
2. Semanticity
3. Arbitrariness
4. ...

Language as a system is made up of discrete, categorical units; these units are perceived categorically, and not continuously.

The key notion of a PHONEME: Distinctive Sounds

Definition: PHONEME

A PHONEME is an abstract, unanalyzeable segment of language that can be used to distinguish/contrast meaning

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- **QUESTION:** But what do we mean when we say it 'distinguishes/contrasts meaning'?

QUESTION: What is Meaning?

QUESTION: What is **meaning** (in language)?

What do you **KNOW**,
when you know what something **MEANS**?

Q: What do you KNOW...

...when you know what something MEANS?

Language MEANING is related to TRUTH

(1) a. Sparrows are a kind of bird True/False

b. Seriemas are endemic of the Neotropics True/False

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- **Q:** Do you know whether (1a) is true?

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  What about (1b)?

Q: What do you KNOW...

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Language MEANING is related to TRUTH

	Know what it means?	Know whether it's true?
(1a)	✓	✓
(1b)	✗	✗

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- Any hypotheses?

  What do you know when you know what a sentence means?

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What is Meaning? : Hypothesis 1

The meaning of a sentence is its TRUTH-VALUE

- i.e., whether it is TRUE or FALSE

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(2) Seriemas are a kind of bird True/False

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The meaning of a sentence is its TRUTH-VALUE

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(2) Seriemas are a kind of bird True/False

- Do you know what (2) means?

Q: What do you KNOW...

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What is Meaning? : Hypothesis 1

The meaning of a sentence is its TRUTH-VALUE

- i.e., whether it is TRUE or FALSE

(2) Seriemas are a kind of bird True/False

- Do you know what (2) means?
- Do you know whether (2) is true or false?

Q: What do you KNOW...

...when you know what something MEANS?

Observation

You can know what a sentence means,

even if you don't know whether it is true or false

	Know what it means?	Know whether it's true?
(1a)	✓	✓
(1b)	✗	✗
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(2)	✓	✗

- This is NOT what we would predict if the meaning of a sentence is its TRUTH-VALUE (i.e., whether it is TRUE or FALSE)

Q: What do you KNOW...

...when you know what something MEANS?

(2) Seriemas are a kind of bird

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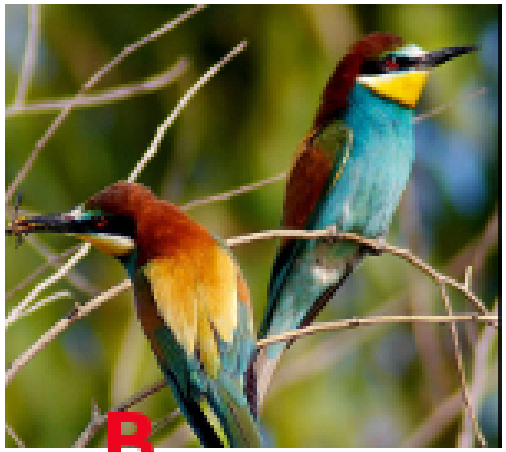

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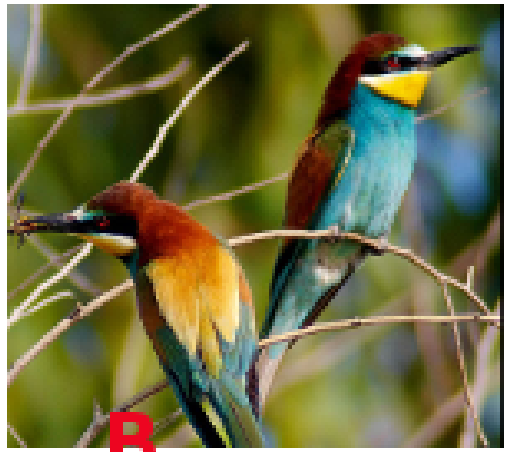

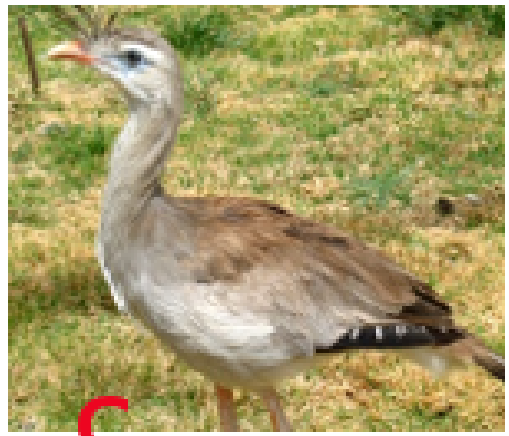

- If I told you that one of these is a seriema,
  in which cases would (2) be true?

Q: What do you KNOW...

...when you know what something MEANS?

What is Meaning? : Hypothesis 2

The meaning of a sentence is its TRUTH-CONDITIONS - i.e., what the world would have to look like, in order for it to be true

	Know what it means?	Know how it could be true?
(1a)	✓	✓
(1b)	✗	✗
(2)	✓	✓

Q: What do you KNOW...

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What is Meaning? : Hypothesis 2

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	Know what it means?	Know how it could be true?
(1a)	✓	✓
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(2)	✓	✓

- This makes better predictions than Hypothesis 1

Q: What do you KNOW...

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That's sentences. What about the meaning of WORDS?

(1) a. Sparrows are a kind of bird

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- **Q:** Why would you know the truth-conditions of (1a) but not (1b)?
- **A:** Because you might not know what the words *seriemas*, *endemic* or *neotropics* **means**

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The meaning of a WORD is its REFERENCE - i.e., what it refers to

eg., A word like...

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- If you know what "dog" means,
  then you know how to categorize objects as dog VS non-dog

A

B

C

D

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- [ɛndɛmɪk] "endemic" refers to a relationship between objects and places, where that kind of object is found only in that place

- If you know what "endemic" means, then you know how to categorize $\langle object, place \rangle$ pairs as endemic VS non-endemic

  A $\langle bermuda\ petrels, Bermuda \rangle$

  B $\langle glacier\ bears, southeast\ Alaska \rangle$

  C $\langle elephants, Asia \rangle$

Q: What do you KNOW...

...when you know what something MEANS?

Definition: PHONEME

A PHONEME is an abstract, unanalyzeable segment of language that can be used to distinguish/contrast meaning

- **Q:** What do we mean when we say a phoneme 'distinguishes/contrasts meaning'?

Q: What do you KNOW...

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- **Q:** What do we mean when we say a phoneme 'distinguishes/contrasts meaning'?
- **A:** The phoneme's presence/absence changes
  (i) the REFERENCE of a word or
  (ii) the TRUTH-CONDITIONS of a sentence

Q: What do you KNOW when you know a language?

Definition: PHONEME

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Q: What does it mean to HAVE or CONTAIN meaning?

Kanuri Morphology Problem Set

(3)

[gana]	"small"	[nemgana]	"smallness"
[kura]	"big"	[nemkura]	"bigness
[kurugu]	"long"	[nemkurugu]	"length"
[karite]	"excellent"	[nemkarite]	"excellence"
[dibi]	"bad"	[nemdibi]	"badness"

(i) If *keji* means 'sweet,'
how would you translate 'sweetness' into Kanuri?

(ii) If *nemnala* means 'goodness,
how would you translate 'good' into Kanuri?

Q: What does it mean to HAVE or CONTAIN meaning?

Kanuri Morphology Problem Set

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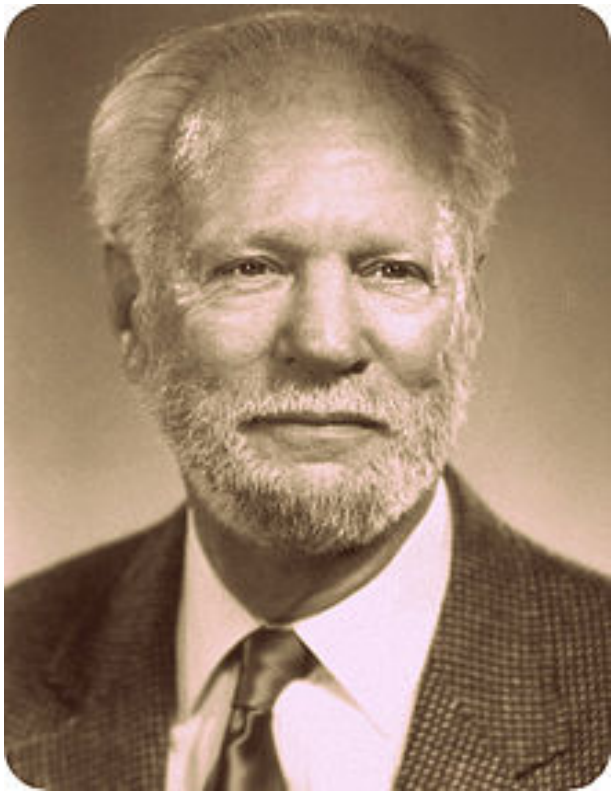
Hockett (1959)

Q: What properties does LANGUAGE have?

i.e., what counts as a LANGUAGE (vs communication system)?



Hockett's Design Features

1. Discreteness
2. Semanticity
3. Arbitrariness
4. Productivity
5. Prevarication
6. Duality of Patterning
7. Displacement
8. ...

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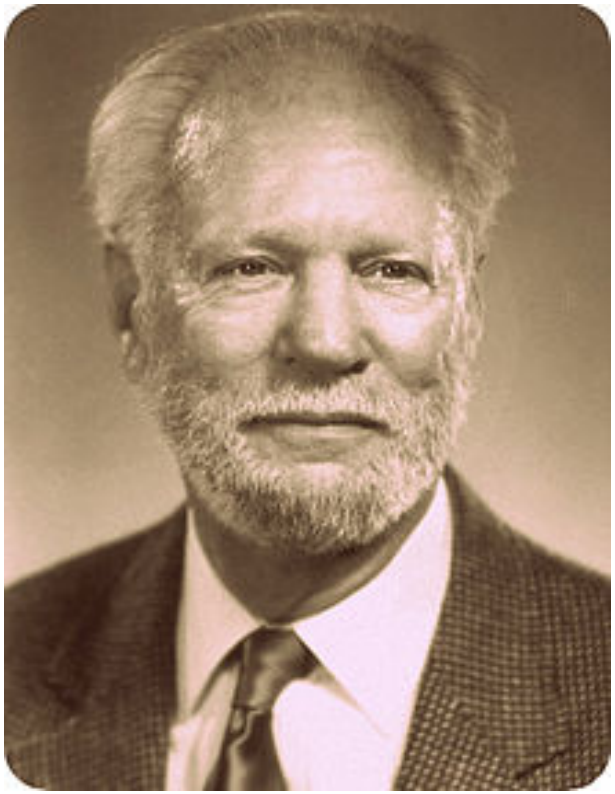

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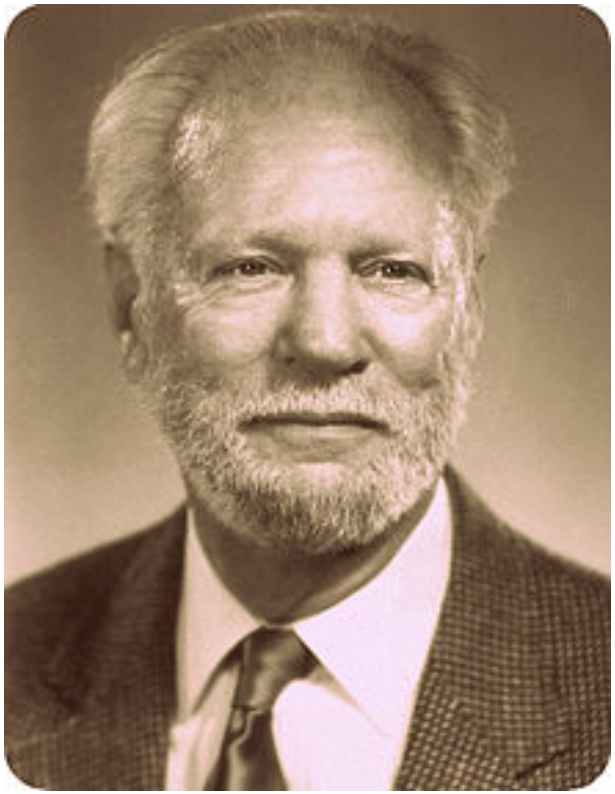

Hockett's Design Feature:
SEMANTICITY

There is a fixed/stable/systematic relationship between a signal (form/sound) and meaning.

Q: What does it mean to HAVE or CONTAIN meaning?

Kanuri

(5)

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Observation:

The addition of *nem-* systematically modifies meaning

$$[\text{nem-} + \text{ADJ}]_{\text{N}} = \textit{the abstract property of being ADJ}$$

-i.e., there is a systematic relationship between form and *meaning*

SEMANTICITY as a Design Feature

- MORPHEMES like Kanuri *nem-* have a **systematic** relationship between form and *meaning*
  - adding *nem-* results in a systematic shift in meaning

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(6)

/tɑp/	"top"		/stɑp/	"stop"
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Lack of SEMANTICITY in PHONEMES

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- /mɑl/ ={ Terminal 21, Central World, Siam Paragon, ... }
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(7)

/stɑp/	"stop$_{\text{N, sg}}$"		/stɑps/	"stops$_{\text{N, pl}}$"
/mæp/	"map$_{\text{N, sg}}$"		/mæps/	"maps$_{\text{N, pl}}$"
/sɑk/	"sock$_{\text{N, sg}}$"		/sɑks/	"socks$_{\text{N, pl}}$"

SEMANTICITY as a Design Feature

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/sɑk/	"sock$_{\text{N, sg}}$"		/sɑks/	"socks$_{\text{N, pl}}$"

- Because adding /-s/ to the end of the word results in a systematic shift in meaning, we must be adding a MORPHEME as opposed to a PHONEME

The SEMANTICITY of MORPHEMES

/kæt/ vs /kæts/

A

B

C

D

The SEMANTICITY of MORPHEMES

/kæt/ vs /kæts/

A

B

C

D

E

The LEXICON: The Repository of MORPHEMES

Definition: MORPHEME

A MORPHEME is the smallest unit of language that **has/contains** meaning - i.e., it is a systematic $\langle form, meaning \rangle$ mapping

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- The LEXICON is our mental dictionary of $\langle form, meaning \rangle$ mappings
- **Q:** What is the relationship between the sound/form and meaning part of $\langle form, meaning \rangle$ mappings?

Hockett's Design Features of Language

Hockett (1959)

Q: What properties does LANGUAGE have?

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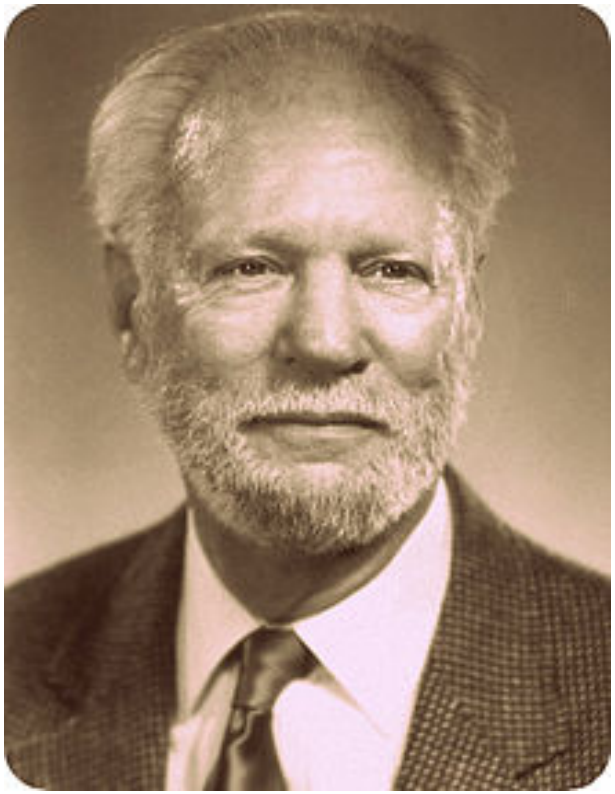

Hockett's Design Features

1. Discreteness
2. Semanticity
3. Arbitrariness
4. Productivity
5. Prevarication
6. Duality of Patterning
7. Displacement
8. ...

Hockett's Design Features of Language

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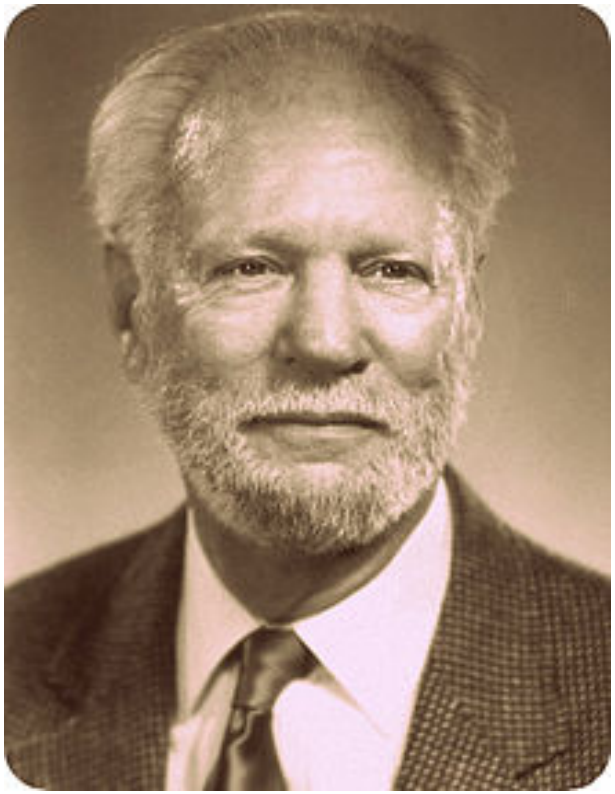

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Ferdinand de Saussure,

Photo by F. Julien Genève

ARBITRARINESS

"The connection between the signifier and the signified is arbitrary"

- De Saussure (1916)

There is no pre-determined or natural link between certain forms/sounds and certain meanings - a meaning can be systematically represented by any combination of sounds.

Hockett's Design Features of Language

Hockett (1959)

ARBITRARINESS allows different languages to use different forms/signs/sounds to refer to the same concept, eg.,

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Hockett's Design Features of Language

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ARBITRARINESS can also explain why the meanings of the words on the left are **not related** to the meanings of the words on the right:

(8)

/tɑp/	"top"		/stɑp/	"stop"
/mal/	"mall"		/smal/	"small
/tajl/	"tile"		/stajl/	"style"

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- If the sound-meaning mapping wasn't arbitrary...

  ...we would expect similar sounding words to have similar meanings

Hockett's Design Features: Arbitrariness

Hockett (1959)

/mɑl/ ={ Terminal 21, Central World, Siam Paragon, ... }

/smɑl/ = { A, B, C, D, ... }

A

B

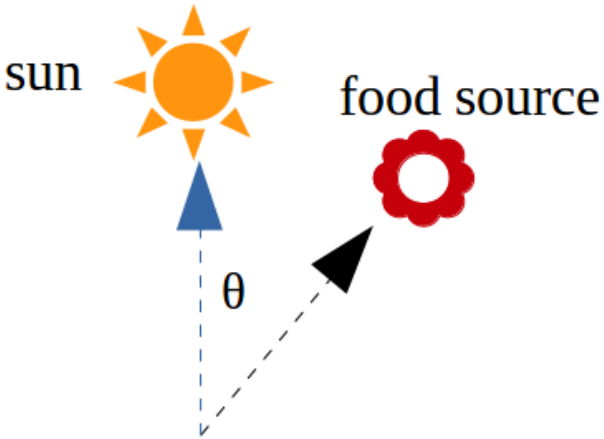
C

D

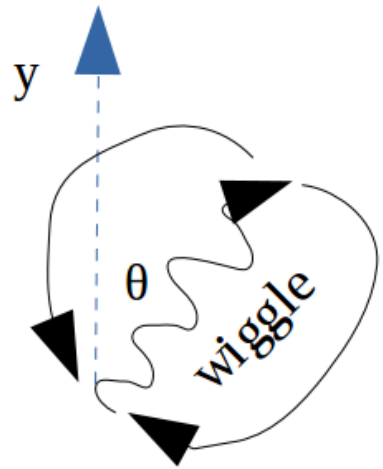
Bee Waggle Dance and ICONICITY

Hockett (1959)

Position of Food Source Diagram



Waggle Dance Diagram



1. $\theta \sim$ angle between current sun position and food source
2. speed $\sim$ amount of food source
3. Length of wiggle $\sim$ distance from hive to food source

ARBITRARINESS as a Design Feature

Q: But is the relationship between sound and meaning ***always*** arbitrary?

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(9)

/stɑp/	"stop$_{\text{N, sg}}$"		/stɑps/	"stops$_{\text{N, pl}}$"
/mæp/	"map$_{\text{N, sg}}$"		/mæps/	"maps$_{\text{N, pl}}$"
/sɑk/	"sock$_{\text{N, sg}}$"		/sɑks/	"socks$_{\text{N, pl}}$"

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- In these cases, adding /-s/ to the end of the word results in a **non-arbitrary** shift in meaning

Non-Arbitrary ⟨*sound*, *meaning*⟩ Mappings

/kæt/ vs /kæts/

A

B

C

D

→ 'cat' refers to the set of objects that qualify as an **atomic cat**...

Non-Arbitrary ⟨*sound*, *meaning*⟩ Mappings

/kæt/ vs /kæts/

→ 'cats' refers to the set of objects
with **atomic cats** as its subparts A simplification, but ...

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(10)

[gana]	"small"	[nemgana]	"smallness"
[kura]	"big"	[nemkura]	"bigness
[kurugu]	"long"	[nemkurugu]	"length"
[karite]	"excellent"	[nemkarite]	"excellence"
[dibi]	"bad"	[nemdibi]	"badness"

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- In these cases, adding /nem-/ to the beginning of the word results in a **non-arbitrary** shift in meaning

Q: When is the ⟨*sound*, *meaning*⟩ mapping ARBITRARY?

QUESTION: What's the difference?

When is the sound-meaning relationship in words ARBITRARY, and when is it not?

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What do YOU think?

Word-Formation Processes

Q: When is the sound-meaning relationship in words ARBITRARY, and when is it not?

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ARBITRARY	NON-ARBITRARY
⟨/mæp/, MAP⟩	⟨/mæp-s/, MAP:PL⟩
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- Do you see a pattern?

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- The words with non-arbitrary meanings
  are MULTI-MORPHEMIC
  (i.e., are complex, consisting of multiple morphemes)

ARBITRARINESS as a Design Feature

The $\langle sound, meaning \rangle$ relationship for

[1] This is not the only way they can combine, but it is the simplest.

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(i) mono-morphemic (single morpheme → ARBITRARY)
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- Morphemes combine via a process called CONCATENATION[1]
  and this process is COMPOSITIONAL

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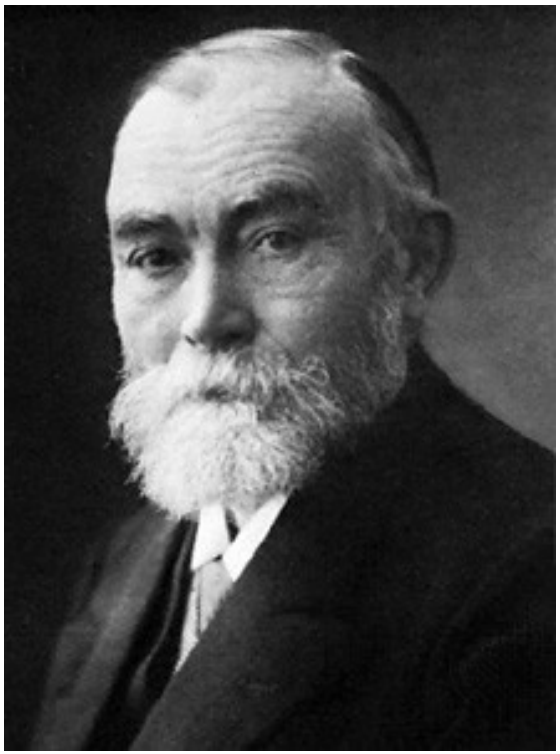
The Principle of Compositionality



Gottlob Frege (1848-1925)

The Principle of Compositionality

> *"...meaning of a complex expression is a function of the meaning of its parts and the way those parts are combined."*

The meaning of a complex word or sentence is based on

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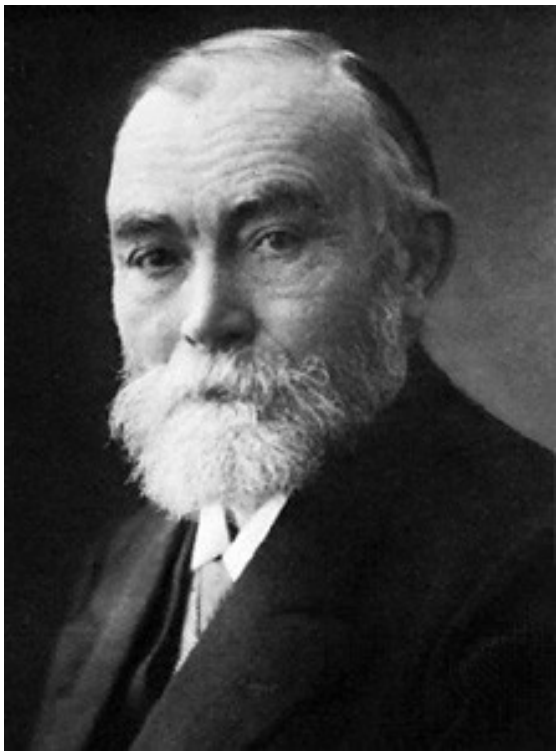

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The Principle of Compositionality: Meaning of the Parts

Definition of *docks* in English:

dock-s [daks]:

NOUN, PL:

Enclosed area**s** of water in a port for the loading, unloading and repair or ships

http://www.oxforddictionaries.com/

Definition of *dox* in English:

dox (*doxx*) [daks]:

VERB:

Search for and publish private or identifying information about (a particular individual) on the Internet, typically with malicious intent:

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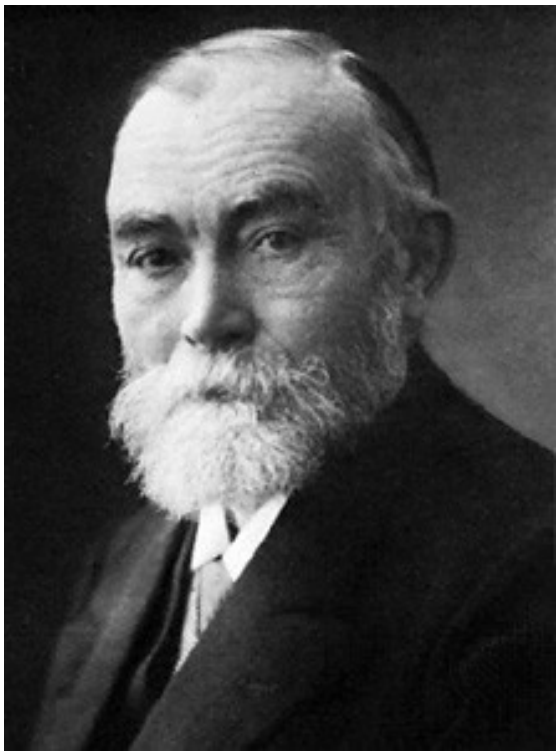

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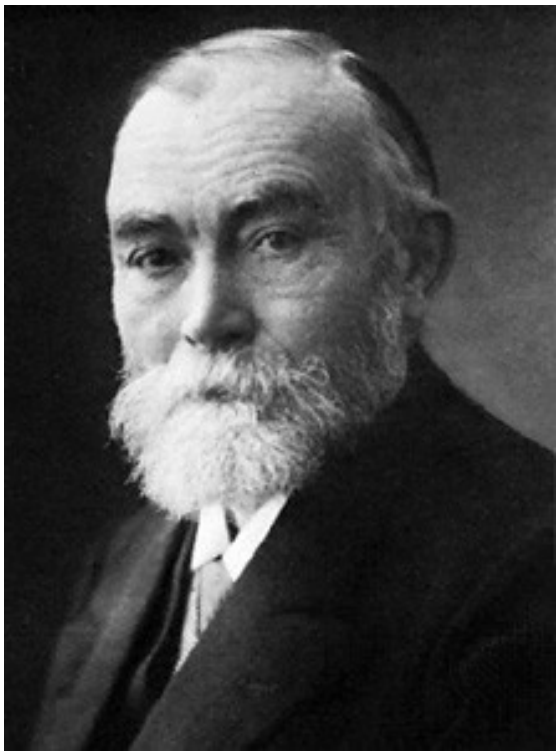

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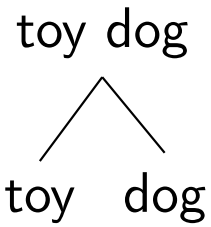

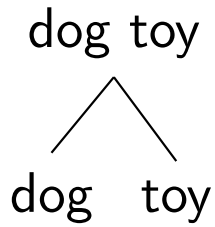

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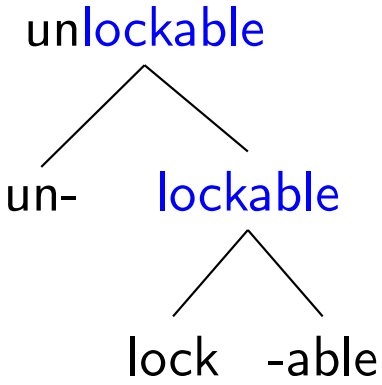

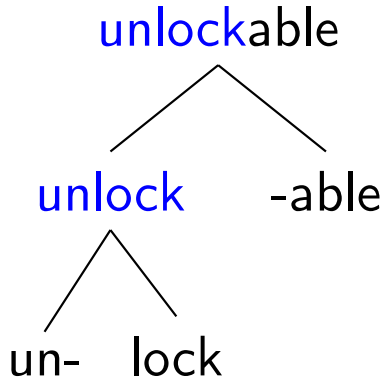

Morpheme Concatenation and MINIMAL PAIRS

Definition: PHONOLOGICAL MINIMAL PAIR

A PHONOLOGICAL MINIMAL PAIR is a pair of words or morphemes that

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Morpheme Concatenation and MINIMAL PAIRS

Morphological Analysis

Just like finding PHONOLOGICAL MINIMAL PAIRS is a good way to start doing a phonological analysis...

... finding MORPHOLOGICAL MINIMAL PAIRS is a good way to start doing morphological analysis:

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Turkish

Find some MORPHOLOGICAL MINIMAL PAIRS

el	hand	ev	house
eller	hands	eve	to the house
elim	my hand	evlerde	in the houses
ellerim	my hands	evden	from the house
elimde	in my hand	evimiz	our house
ellerimde	in my hands	evde	in the house
elimden	from my hand	evlerimiz	our houses
ellerimden	from my hands	evleriniz	your (pl) houses
elin	your(sg) hand	evim	my house
ellerin	your(sg) hands	evler	houses
ellerimiz	our hands	eline	to your(sg) hand
ellerinize	to your(pl) hands		

Turkish

What is the form of the morphemes that mean "hand" and "house"?

el	hand	ev	house
eller	hands	eve	to the house
elim	my hand	evlerde	in the houses
ellerim	my hands	evden	from the house
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Turkish

What is the form of the morphemes that mean PL and "my$_{1.\text{SG.POSS}}$"?

el	hand	ev	house
eller	hands	eve	to the house
elim	my hand	evlerde	in the houses
ellerim	my hands	evden	from the house
elimde	in my hand	evimiz	our house
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Turkish

What is the form of the morphemes that mean "your$_{2.\text{SG.POSS}}$"?

el	hand	ev	house
eller	hands	eve	to the house
elim	my hand	evlerde	in the houses
ellerim	my hands	evden	from the house
elimde	in my hand	evimiz	our house
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Turkish

Are there morphemes that mean "our$_{1.\text{PL.POSS}}$" "your$_{2.\text{PL.POSS}}$"?

el	hand	ev	house
eller	hands	eve	to the house
elim	my hand	evlerde	in the houses
ellerim	my hands	evden	from the house
elimde	in my hand	evimiz	our house
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Turkish

What's the form of the morphemes meaning "to'," "in," and "from,"?

el	hand	ev	house
eller	hands	eve	to the house
elim	my hand	evlerde	in the houses
ellerim	my hands	evden	from the house
elimde	in my hand	evimiz	our house
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Turkish

What is the morpheme order/template in Turkish?

el	hand	ev	house
eller	hands	eve	to the house
elim	my hand	evlerde	in the houses
ellerim	my hands	evden	from the house
elimde	in my hand	evimiz	our house
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Turkish

How would you say "to our houses"'?

el	hand	ev	house
eller	hands	eve	to the house
elim	my hand	evlerde	in the houses
ellerim	my hands	evden	from the house
elimde	in my hand	evimiz	our house
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How would you say "in my house"'?

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Types of Morphemes: Distributional Categories

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  - The base that -den "from" attaches to is el-ler-im "my hands"

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  sulat "to write" and sumulat "wrote,"sinulat "was written,"
  ʔaral "to teach" and ʔumral "taught,"ʔinral "was taught,"
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- English Expletive infixation
  abso-fucking-lutely, fan-fucking-tastic, parlia-fucking-mentary

Restrictions on Morpheme Concatenation

Q: Can affixes attach to any kind of stem?

Observation: Not all words can take the past tense /-ed/

I	II	III	IV	V
cat, dog,...	smile, walk,...	red, fat,...	the, a,...	under, in,...
*cat-ed,	smile-d,	*red-ed,	*the-ed,	*under-ed,
*dog-ed	walk-d,	*fat-ed	*a-ed	*in-ed,
*ipod-ed,	realiz-ed,	*small-ed,	*this-ed,	*through-ed,
*teacup-ed,	boil-ed,	*spicy-ed,	*that-ed,	*beside-ed,

Restrictions on Morpheme Concatenation

Q: Can affixes attach to any kind of stem?

Observation: Only some words can take plural morphology

I	II	III	IV	V
cat, dog,...	realize, alienate,...	red, fat,...	the, a,...	under, on,...
cat-s, dog-s	*realize-s,	*red-s, *fat-s	?the-s, ?a-s	?under-s,
ipods	*alienate-s,	*small-s,	?this-s,	?through-s,
teacups	*banish-s,	*spicy-s,	?that-s,	?beside-s,

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(11)
a. /nâa-rák/ น่ารัก
b. /nâa-jùu/ น่าอยู่
c. /nâa-mɔɔŋ/ น่ามอง
d. /nâa-kʰít/ น่าคิด

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a. */nâa-híw/ น่าหิว
b. */nâa-rɔ́ɔn/ น่าร้อน
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a. */nâa-pʰaasăa/ น่าภาษา
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c. */nâa-năŋsʉ̆ʉ/ น่าหนังสือ
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- What determines when the morpheme ⟨/nâa/, -WORTHY[a] ⟩ can combine with another morpheme?

[a] Hahahaha, as if I actually know what this means.

Morphemes consist of ⟨form, meaning, category⟩

Observation: Affixes have SELECTIONAL RESTRICTIONS

- they can only attach to certain LEXICAL CATEGORIES,

eg., N, V, Adj, Adv, Prep, ...

(More on lexical categories next week)

Next Time: Introduction to Semantics and Morphology

1. **Homework:** Morphology Problem Set
   - Start working on the problems now, in groups
   - Due next week - hand in one per group
   - (Put everyone's names and student numbers on the assignment)

2. **Instagram Homework:**
   Find and post a Morphological Minimal Pair [2]

[2] But it's like Scattegories - if someone else has already posted that minimal pair, you need to find a different one for it to count!

References I

De Saussure, Ferdinand. 1916. Nature of the linguistic sign. Course in general linguistics .

Hockett, Charles F. 1959. Animal "languages" and human language. Human Biology 31(1). 32–39.