

Syntactic Theory and Psycholinguistics

Some conundra

The language faculty appears complex...
...but it evolved over an extremely brief period of time.

The LF is evolutionarily recent...
...but we don't command syntax consciously.

Morass of Structuralism and Behaviorism

- Language was a “steady-state” structure:
 - Set number of phonemes
 - Set number of morphemes
 - Set number of words
- Structural Grammar - compendium of all of the “atomic elements” of a language.
- Behaviorists set upon understanding how these elements were “learned.”

		Labial	Dental	Palatal	Velar		Glottal
					plain	labialized	
Plosive	voiced	b	d		g	g ^w †	
	voiceless	p	t		k	k ^w †	
	aspirated	p ^h *	t ^h *		k ^h *		
Fricative	voiced		z*				
	voiceless	f	s				h
Nasal		m	n		(ŋ)		
Rhotic			r				
Approximant			l	j		w	

Latin: Master Verb Chart

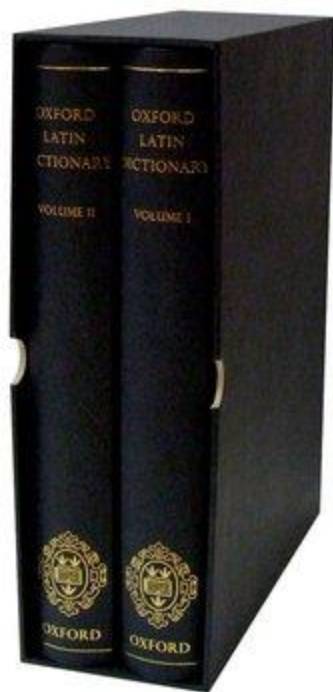
Indicative Active						
	Present	Imperfect	Future	Perfect	Pluperfect	Future Perfect
I	m / ō	bam	bo / am	ī	eram	erō
You	s	bās	bis / ēs	istī	erās	eris
He / She / It	t	bat	bit / et	it	erat	erit
We	mus	bāmus	bīmus / ēmus	imus	erāmus	erimus
You (pl.)	tis	bātis	bītis / ētis	istis	erātis	eritis
They	nt	bant	bunt / ent	ērunt	erant	erint

Infinitive		
Conjugation	Ending	Modified
1	āre	ē
2	ēre	eā
3	ere	ā
4	īre	iā

Indicative Passive						
	Present	Imperfect	Future	Perfect	Pluperfect	Future Perfect
I	r	bar	bor / ar	4pp + sum	4pp + eram	4pp + erō
You	ris	bāris	beris / ris	4pp + es	4pp + erās	4pp + eris
He / She / It	tur	bātur	bitur / tur	4pp + est	4pp + erat	4pp + erit
We	mur	bāmur	bimur / mur	4pp + summus	4pp + erāmus	4pp + erimus
You (pl.)	minī	bāminī	biminī / minī	4pp + estis	4pp + erātis	4pp + eritis
They	ntur	bantur	buntur / ntur	4pp + sunt	4pp + erant	4pp + erunt

Legend	
Key	Meaning
3pp	3rd Princ. Part
4pp	4th Princ. Part
inf	Infinitive
/	OR (depends on inf)
minf	Modified Infinitive

Subjunctive Active					Subjunctive Passive			
	Present	Imperfect	Perfect	Pluperfect	Present	Imperfect	Perfect	Pluperfect
I	minf + m	inf + m	3pp + erim	3pp + issem	minf + r	inf + r	4pp + sim	4pp + essem
You	minf + s	inf + s	3pp + eris	3pp + issēs	minf + ris	inf + ris	4pp + sis	4pp + essēs
He / She / It	minf + t	inf + t	3pp + erit	3pp + isset	minf + tur	inf + tur	4pp + sit	4pp + esset
We	minf + mus	inf + mus	3pp + erimus	3pp + issēmus	minf + mur	inf + mur	4pp + simus	4pp + essemus
You (pl.)	minf + tis	inf + tis	3pp + eritis	3pp + issētis	minf + minī	inf + minī	4pp + sitis	4pp + essētis
They	minf + nt	inf + nt	3pp + erint	3pp + issent	minf + ntur	inf + ntur	4pp + sint	4pp + essent



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You	s	bas	bis / es	isti	eratis	eritis
He / She / It	t	bat	bit / et	it	erat	erit
We	mus	bāmus	bimur / ēmus	imus	erāmus	erimus
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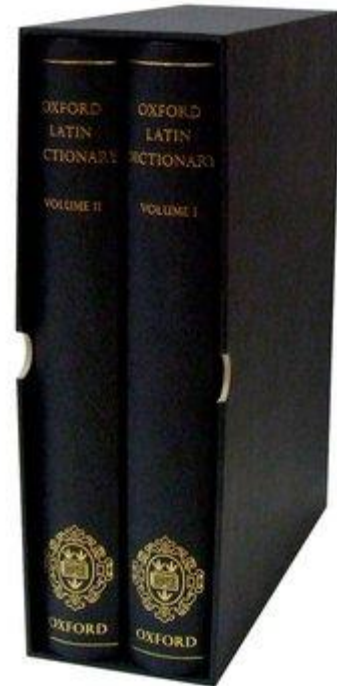
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He / She / It	minf + t	inf + t	3pp + erit	3pp + isset	minf + tur	inf + tur	4pp + sit	4pp + esset
We	minf + mus	inf + mus	3pp + erimus	3pp + issemus	minf + mur	inf + mur	4pp + simus	4pp + essemus
You (pl.)	minf + tis	inf + tis	3pp + eritis	3pp + issetis	minf + mini	inf + mini	4pp + sitis	4pp + essetis
They	minf + nt	inf + nt	3pp + erint	3pp + isserint	minf + ntur	inf + ntur	4pp + sint	4pp + essent

+

+



= a structuralist grammar

Generativity

- There is an infinite number of grammatical sentences in each language.
- Every native speaker has an immediate judgment of grammaticality for any potential sentence.
- However linguistic input for any child is finite.

Generativity



Generative Linguistics

- Search for “Universal Grammar”/“the Language Faculty;” the set of traits of language not based on other cognitive faculties.
- If you know the traits, you can reverse engineer the system.
- If you know the system, you can understand how it evolved.

1. **Standard Theory (1957 - 1970)**

- Recursive Phrase Structure Rules create a “deep structure” (DS) of language.
- Syntactic and phonological “transformations” produce a “surface structure” from this.
- However, meaning still comes from the DS.

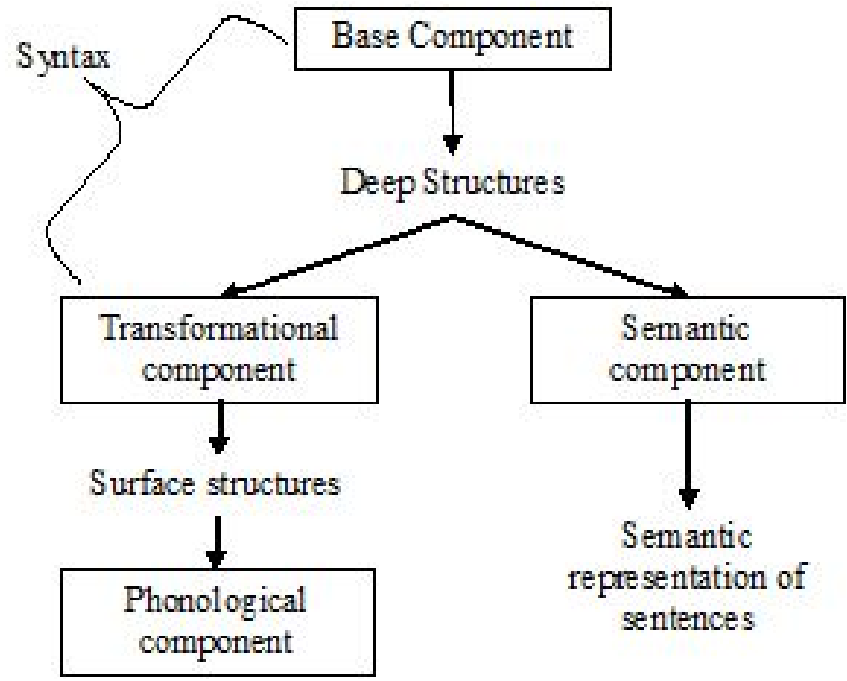
$S \rightarrow NP VP$

$NP \rightarrow (D) (AP) N (PP)$

$VP \rightarrow V (NP) (PP)$

$AP \rightarrow A$

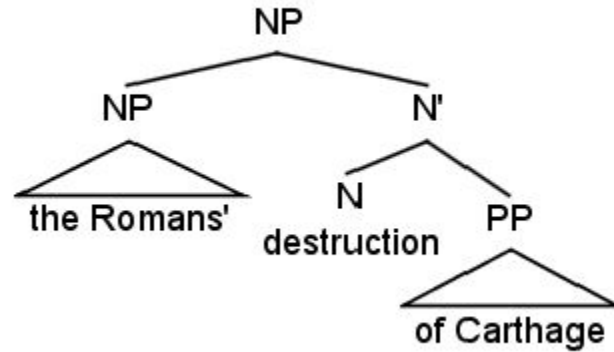
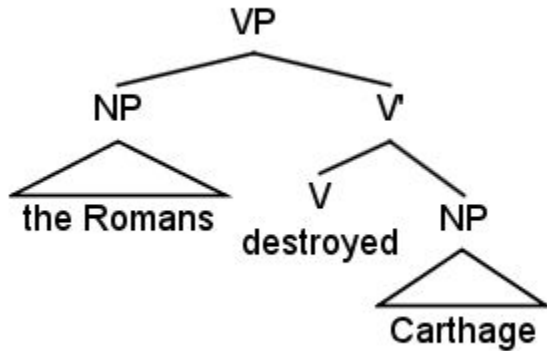
$PP \rightarrow P NP$

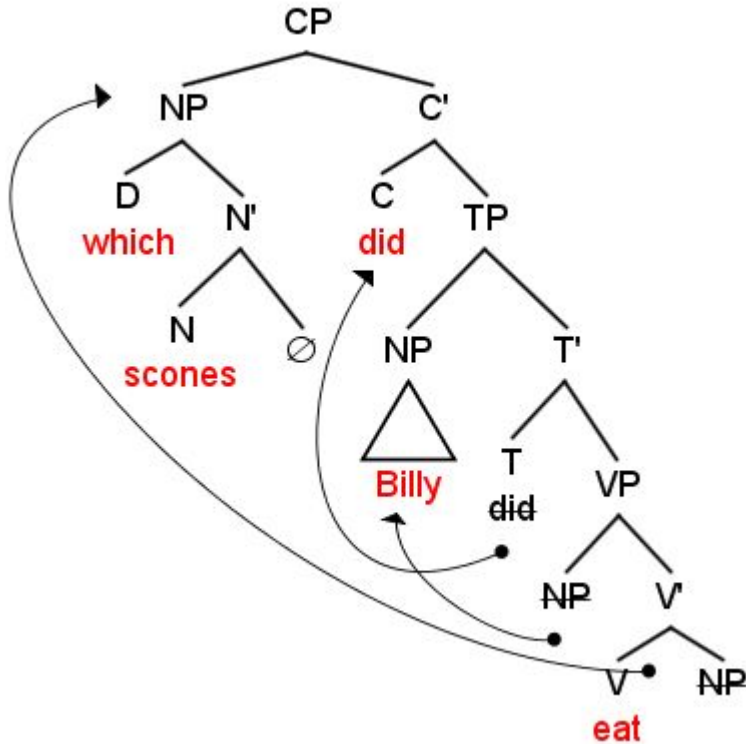


2. X-bar, P&P, G&B (1970-1990)

- Universal framework for all phrases and languages.
- Symmetry between all nouns and verbs.
- Languages only vary by binary “parameters” like the word order or movement.
- Universal abstract categories.

Structural Similarity





Wh-raising

T-to-C (SAI)

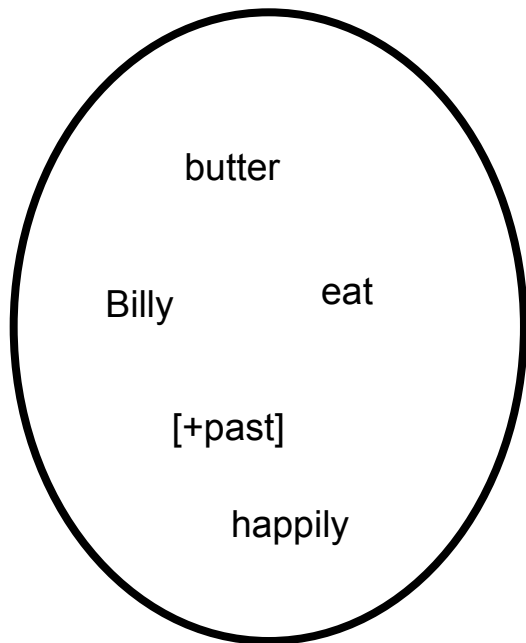
V-to-T

3. Minimalism (1990 - now)

- “Lexically” driven; built from the bottom up, thought to be computationally efficient.
- “Antisymmetrical” - *all* languages are underlyingly SVO/left-headed
- No deep structure; immediate derivation.
- MERGE.

Contrasting Minimalism

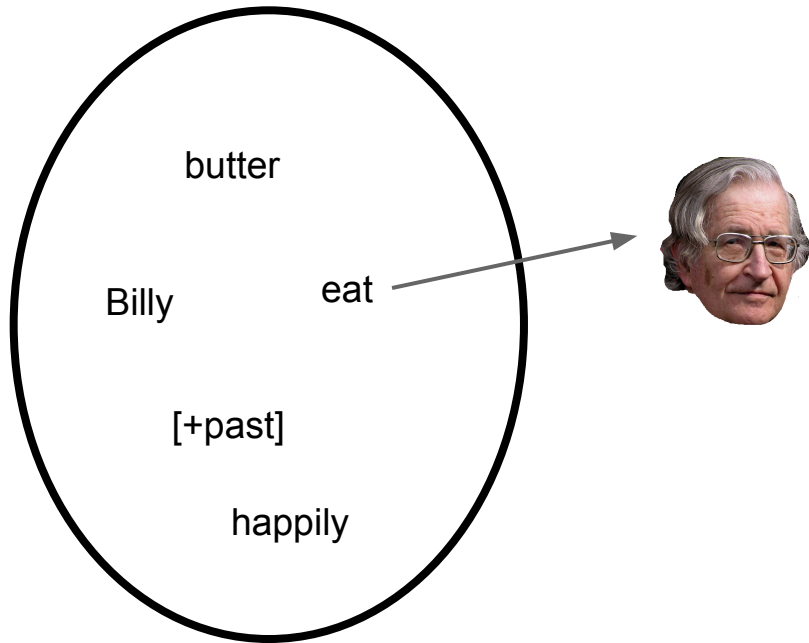
“Numeration”



“MERGE”

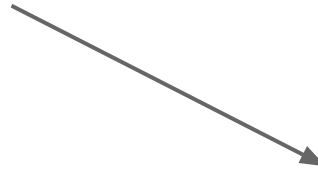
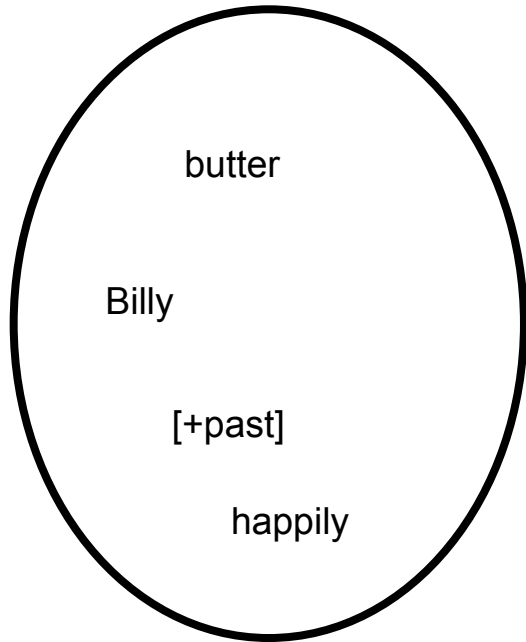
Contrasting Minimalism

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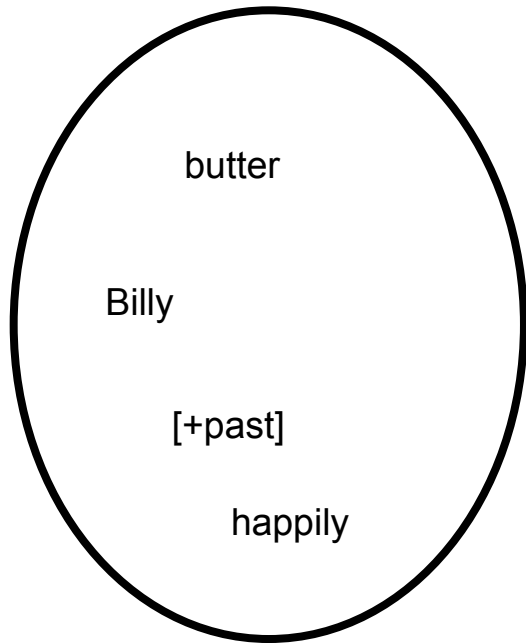
“Numeration”



eat

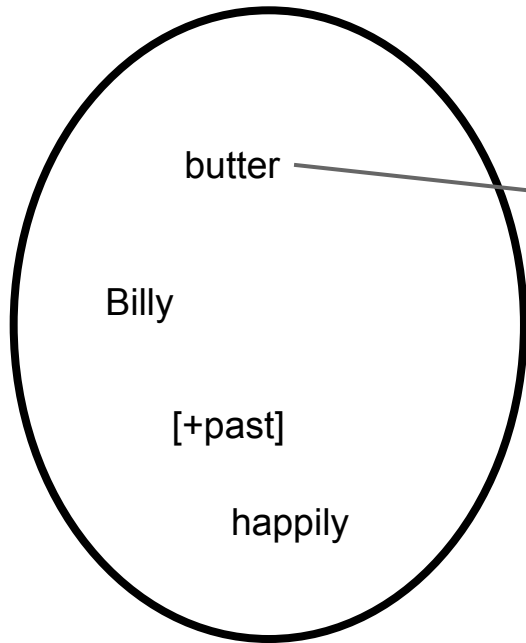
Contrasting Minimalism

“Numeration”



Contrasting Minimalism

“Numeration”



butter

Billy

[+past]

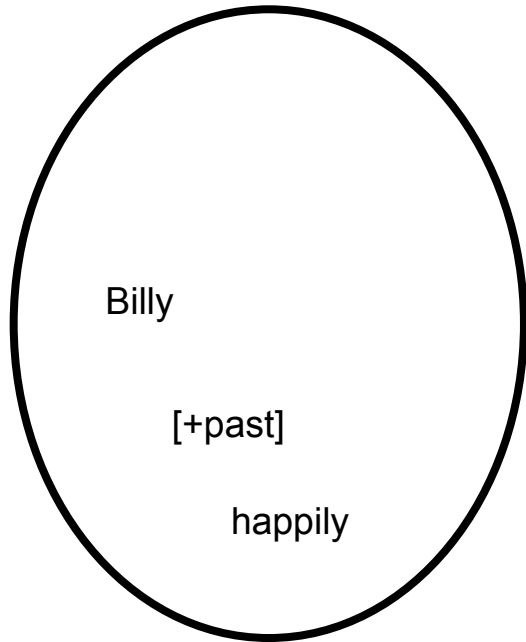
happily



eat

Contrasting Minimalism

“Numeration”



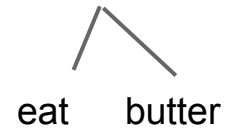
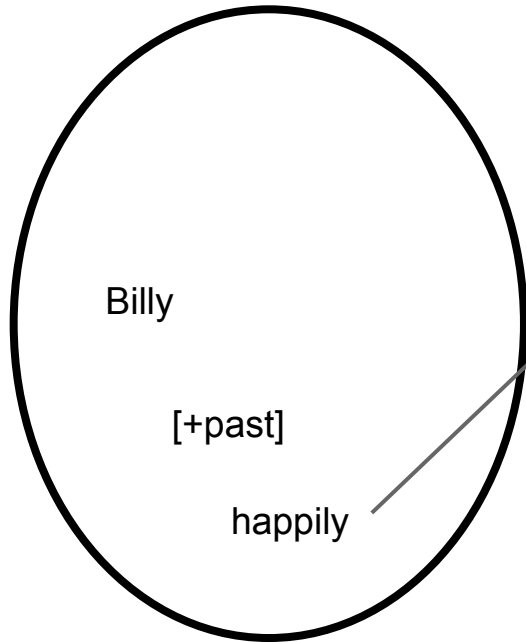
now we need some other item with [+whatever]

eat butter

A simple tree diagram with a single parent node at the top and two child nodes, "eat" and "butter", below it.

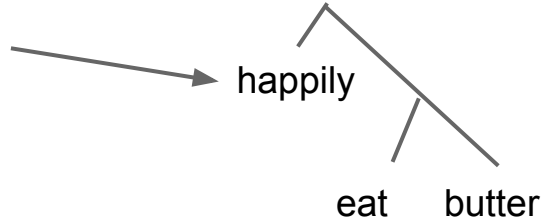
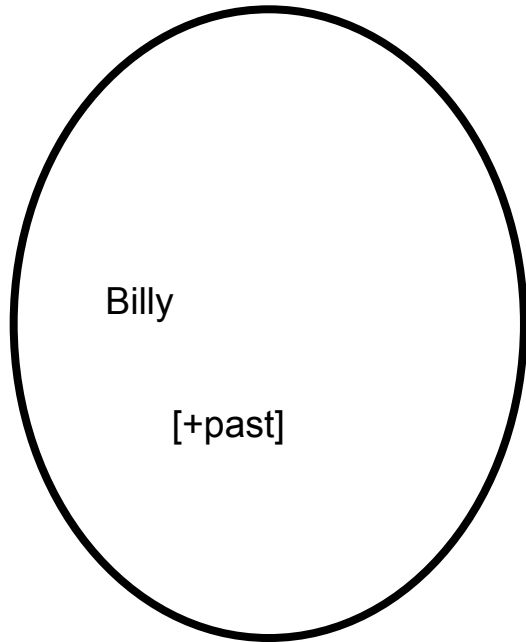
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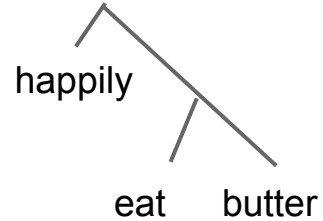
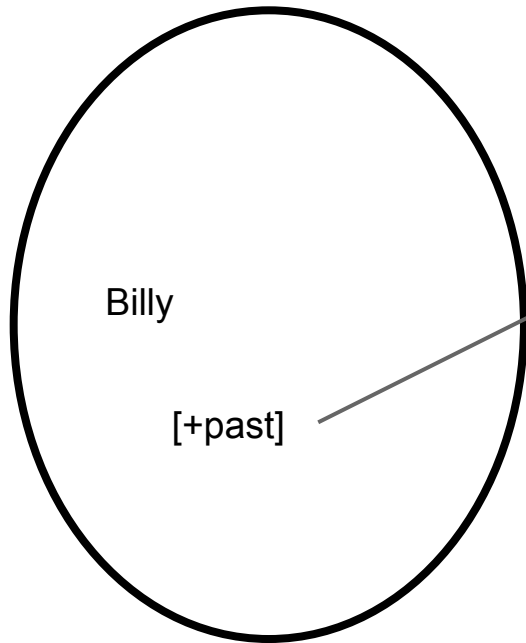
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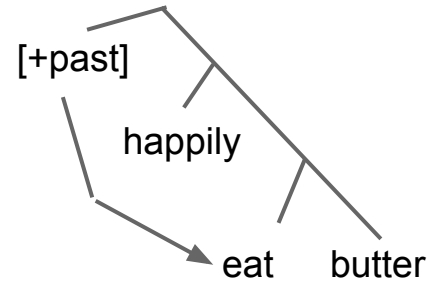
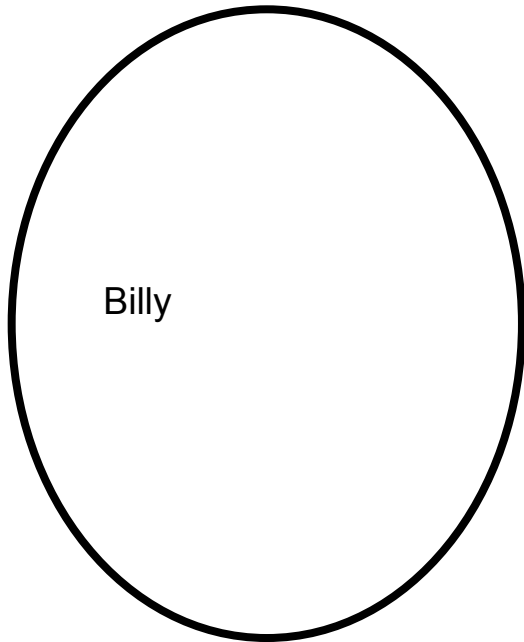
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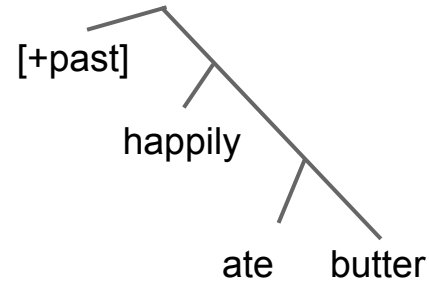
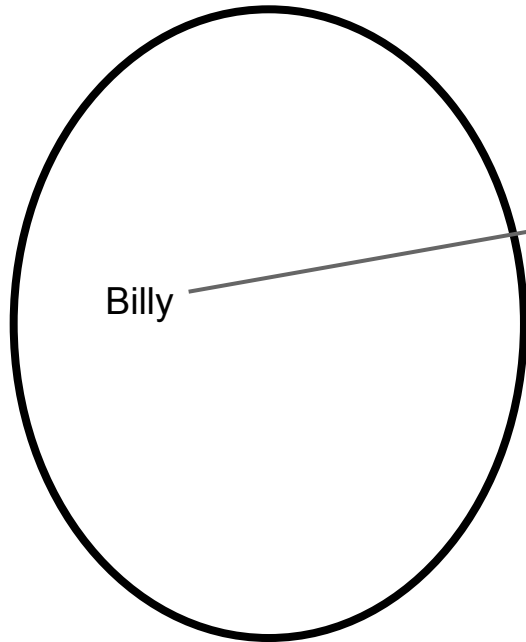
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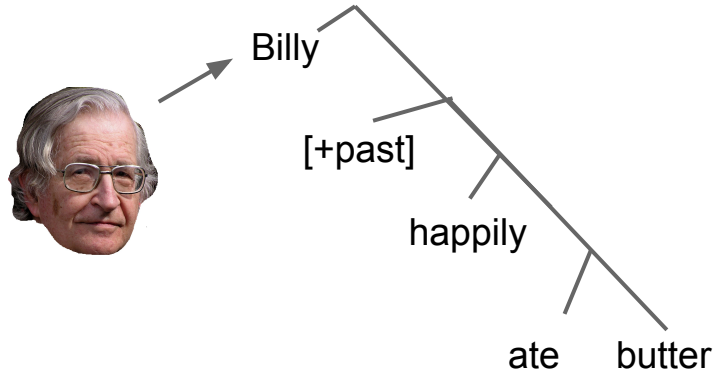
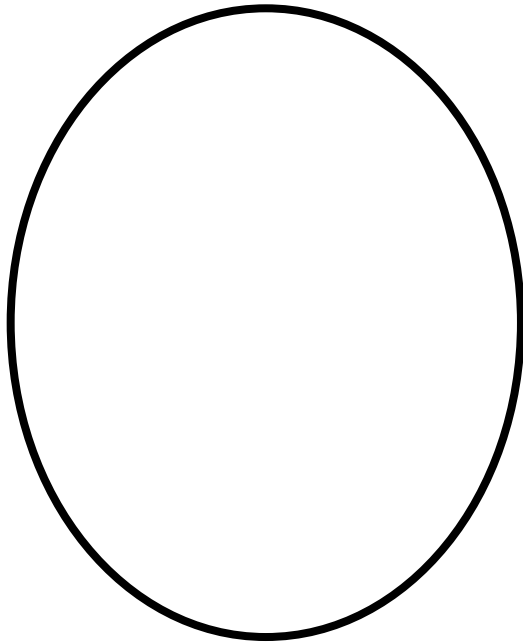
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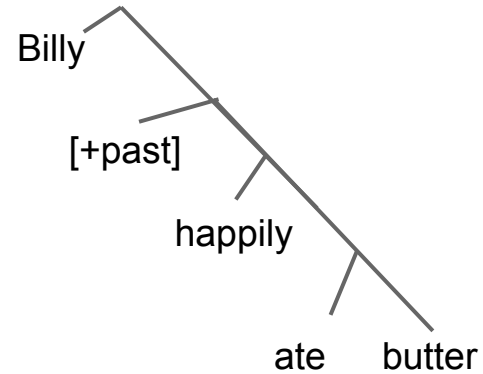
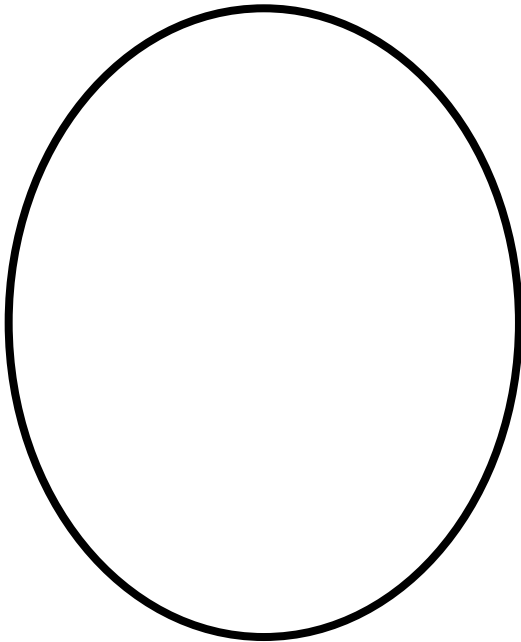
Contrasting Minimalism

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Contrasting Minimalism

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Chomskyan Direction

- MERGE does not just create language, but hierarchical thought generally.
- “Language” as we know it is an externalization of a larger *cognitive* development of humans.
- Language derivation is semantically blind.

Generative Semantics (~1965 - ~1980)

- Acknowledged that semantics has to come first for a psycho-linguistically real model.
- Underlying formal logic of the brain is the “deep structure,” the LF is a set of learned “transformations.”
- Humans think in formal logic (hahahaha, that’s a retarded idea.)
- Movement suffocated by Chomsky’s clout.

But...

- Numeration is just begging the question.
- There exists language structure beyond apparent lexical demands.
- MERGE isn't enough to account for semantic structure in language.

Argument Structure “vP Hypothesis”

- In all known human languages, semantic “agents” are syntactically superior to semantic “patients.”
- In fact, there seems to be set locations for all “theta roles” in argument structure.

VP_{agent}

VP_{experiencer}

VP_{affectee}

VP_{recipient}

VP_{patient}

VP_{theme}

Verb

Sanio-Hiowe	a	Mood _{speech act}	b	AdvP _{speech act} (frankly,...)	Burmese
Tauya		Mood _{evaluative}		AdvP _{evaluative} (fortunately,...)	Chinese
Una		Mood _{evidential}		AdvP _{evidential} (allegedly,...)	Garo
Yareba		Mod _{epistemic}		AdvP _{epistemic} (probably,...)	Kachin
Wahgi		Tense _{past/future}		AdvP _{past/future} (then,...)	Patami
Na-Dene		Mod _{necessity}		AdvP _{necessity} (necessarily,...)	Tshangla
Canela-Craho		Mod _{possibility}		AdvP _{possibility} (possibly,...)	Aleut
Diegueño		Aspect _{habitual}		AdvP _{habitual} (usually,...)	Central Alaskan
		Aspect _{repetitive}		AdvP _{repetitive} (again,...)	Malayalam
French	Ubykh	Aspect _{frequentative}		AdvP _{frequentative} (frequently,...)	Kammu
Italian	Lezgian	Mod _{volition}		AdvP _{volition} (willingly,...)	Thai
English	Arabic	Aspect _{celerative}		AdvP _{celerative} (quickly,...)	Malay
Spanish	Mofu-Gudur	Tense _{anterior}		AdvP _{anterior} (already)	Kwaio
Welsh	Dagaare	Aspect _{terminative}		AdvP _{terminative} (no longer,...)	Ponapean
Greek	Fula	Aspect _{continuative}		AdvP _{continuative} (still,...)	Kiribatese
Hindi	Gungbe	Aspect _{continuous}		AdvP _{continuous} (always,...)	Anejom
Finnish	Isekiri	Aspect _{retrospective}		AdvP _{retrospective} (just,...)	Samoan
Hungarian	Kako	Aspect _{durative}		AdvP _{durative} (briefly,...)	Tokelau
Evenki	Kom	Aspect _{prospective}		AdvP _{prospective} (imminently,...)	Big Nambas
Korean	Makaa	Mod _{obligation}		AdvP _{obligation} (obligatorily,...)	Walmadjari
Turkish	Sotho	Aspect _{frustrative}		AdvP _{frustrative} (in vain,...)	Ngiyambaa
Abkhaz	Yoruba	Aspect _{completive}		AdvP _{completive} (partially,...)	Fore
		Voice _{passive}		AdvP _{manner} (well,...)	Menya
		Verb		Verb	

...

Hidatsa, Ika, Macushi, Quechua, Ute, Waorani,
Berbice Dutch Creole, Guyanese Creole, Haitian
Creole, Louisiana Creole, Ndyuka, Nigerian Pidgin,
Seychelles Creole, Sierra Leone Krio, Sranan,
Basque, Coahuilteco, Zuni...

(Let's just say *all of them* for now...)

Same is true of Adjectives

(Scott 2002)

the 5 large fat old Canadian men

*the Canadian fat 5 large old men

*fat old 5 Canadian large the men

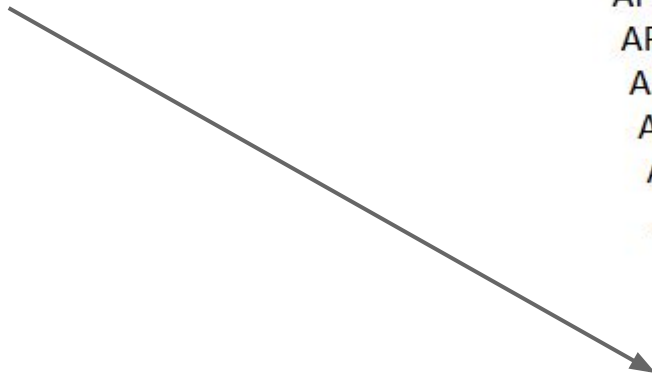
DP
NumP_{ordinal}
NumP_{cardinal}
AP_{subjective}
AP_{evidential}
AP_{size}
AP_{length}
AP_{height}
AP_{speed}
AP_{depth}
AP_{width}
AP_{weight}
AP_{temperature}
AP_{wetness}
AP_{age}
AP_{shape}
AP_{color}
AP_{nationality/origin}
AP_{material}
AP_{compound element}
Noun

Interpretations

- Cinque - All of these structures are specified in universal grammar.
- Remember the conundra: this only makes language *far* too complex to have evolved.
- Shouldn't this structure exists elsewhere in the mind?

My assumptions

- Semantic order, even recursion are traits of other mental capacities.
- Hierarchical thought is present in non-human animals.
- The Language Faculty/UG is just an evolved capacity to externalize the semantic nodes of other cognitive capacities.



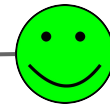
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- AP_{age}
- AP_{shape}
- AP_{color}
- AP_{nationality/origin}
- AP_{material}
- AP_{compound element}
- Noun**

men

- DP
- NumP_{ordinal}
- NumP_{cardinal}
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- AP_{size}
- AP_{length}
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- AP_{speed}
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- Noun**



← Canadian men

old Canadian men



- DP
- NumP_{ordinal}
- NumP_{cardinal}
- AP_{subjective}
- AP_{evidential}
- AP_{size}
- AP_{length}
- AP_{height}
- AP_{speed}
- AP_{depth}
- AP_{width}
- AP_{weight}
- AP_{temperature}
- AP_{wetness}
- AP_{age}
- AP_{shape}
- AP_{color}
- AP_{nationality/origin}
- AP_{material}
- AP_{compound element}
- Noun**

fat old Canadian men



- DP
- NumP_{ordinal}
- NumP_{cardinal}
- AP_{subjective}
- AP_{evidential}
- AP_{size}
- AP_{length}
- AP_{height}
- AP_{speed}
- AP_{depth}
- AP_{width}
- AP_{weight}
- AP_{temperature}
- AP_{wetness}
- AP_{age}
- AP_{shape}
- AP_{color}
- AP_{nationality/origin}
- AP_{material}
- AP_{compound element}
- Noun**

large fat old Canadian men



- DP
- NumP_{ordinal}
- NumP_{cardinal}
- AP_{subjective}
- AP_{evidential}
- AP_{size}
- AP_{length}
- AP_{height}
- AP_{speed}
- AP_{depth}
- AP_{width}
- AP_{weight}
- AP_{temperature}
- AP_{wetness}
- AP_{age}
- AP_{shape}
- AP_{color}
- AP_{nationality/origin}
- AP_{material}
- AP_{compound element}
- Noun**

5 large fat old Canadian men



- DP
- NumP_{ordinal}
- NumP_{cardinal}
- AP_{subjective}
- AP_{evidential}
- AP_{size}
- AP_{length}
- AP_{height}
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the 5 large fat old Canadian men



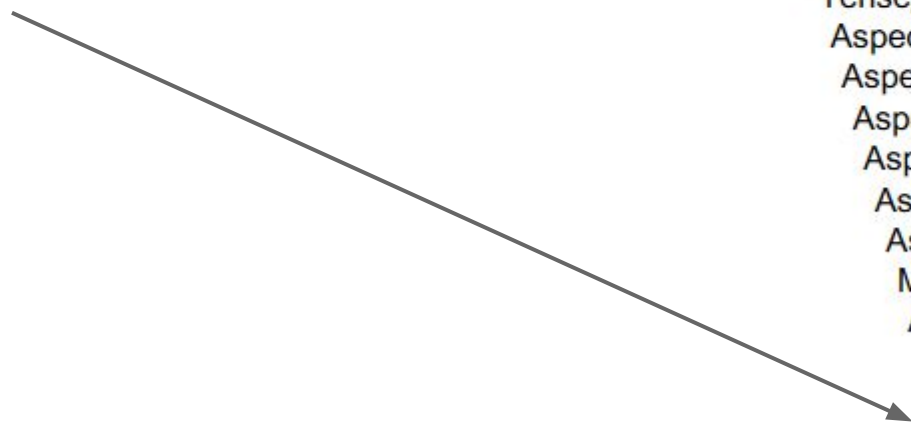
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- AP_{depth}
- AP_{width}
- AP_{weight}
- AP_{temperature}
- AP_{wetness}
- AP_{age}
- AP_{shape}
- AP_{color}
- AP_{nationality/origin}
- AP_{material}
- AP_{compound element}
- Noun**

gu buni
this person



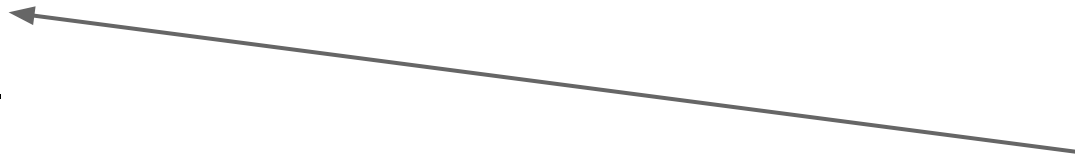
Mood_{speech act}
Mood_{evaluative}
Mood_{evidential}
Mod_{epistemic}
Tense_{past/future}
Mod_{necessity}
Mod_{possibility}
Aspect_{habitual}
Aspect_{repetitive}
Aspect_{frequentative}
Mod_{volition}
Aspect_{celerative}
Tense_{anterior}
Aspect_{terminative}
Aspect_{continuative}
Aspect_{continuous}
Aspect_{retrospective}
Aspect_{durative}
Aspect_{prospective}
Mod_{obligation}
Aspect_{frustrative}
Aspect_{completive}
Voice_{passive}
Verb

gu buni
this person



- Mood_{speech act}
- Mood_{evaluative}
- Mood_{evidential}
- Mod_{epistemic}
- Tense_{past/future}
- Mod_{necessity}
- Mod_{possibility}
- Aspect_{habitual}
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- Aspect_{frequentative}
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- Voice_{passive}
- Verb**

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gu buni jab
 this person catch-


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- Aspect_{completive}
- Voice_{passive}
- Verb**



gu buni jab -hi
 this person catch-PASS

gu buni jab -hi -si
this person catch-PASS -HON

Mood_{speech act}
Mood_{evaluative}
Mood_{evidential}
Mod_{epistemic}
Tense_{past/future}
Mod_{necessity}
Mod_{possibility}
Aspect_{habitual}
Aspect_{repetitive}
Aspect_{frequentative}
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Aspect_{prospective}
Mod_{obligation}
Aspect_{frustrative}
Aspect_{completive}
Voice_{passive}
Verb



gu buni jab -hi -si -eos
this person catch-PASS -HON -ANT .

Mood_{speech act}
Mood_{evaluative}
Mood_{evidential}
Mod_{epistemic}
Tense_{past/future}
Mod_{necessity}
Mod_{possibility}
Aspect_{habitual}
Aspect_{repetitive}
Aspect_{frequentative}
Mod_{volition}
Aspect_{celerative}
←Tense_{anterior}
Aspect_{terminative}
Aspect_{continuative}
Aspect_{continuous}
Aspect_{retrospective}
Aspect_{durative}
Aspect_{prospective}
Mod_{obligation}
Aspect_{frustrative}
Aspect_{completive}
Voice_{passive}
Verb



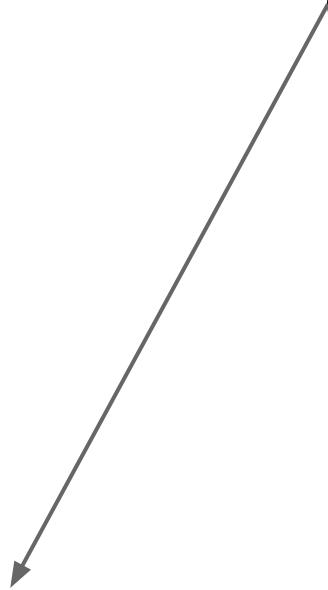
gu buni jab -hi -si -eos-eot

this person catch-PASS -HON -ANT -PAST



Mood_{speech act}
Mood_{evaluative}
Mood_{evidential}
Mod_{epistemic}
Tense_{past/future}
Mod_{necessity}
Mod_{possibility}
Aspect_{habitual}
Aspect_{repetitive}
Aspect_{frequentative}
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Tense_{anterior}
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Mod_{obligation}
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Aspect_{completive}
Voice_{passive}
Verb

- Mood_{speech act}
- Mood_{evaluative}
- Mood_{evidential}
- ← Mod_{epistemic}
- Tense_{past/future}
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- Aspect_{completive}
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- Verb**



gu buni jab -hi -si -eos-eot-gess

this person catch-PASS -HON -ANT -PAST -EPIST



Mood_{speech act}
Mood_{evaluative}
Mood_{evidential}
Mod_{epistemic}
Tense_{past/future}
Mod_{necessity}
Mod_{possibility}
Aspect_{habitual}
Aspect_{repetitive}
Aspect_{frequentative}
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Aspect_{durative}
Aspect_{prospective}
Mod_{obligation}
Aspect_{frustrative}
Aspect_{completive}
Voice_{passive}
Verb

gu buni jab -hi -si -eos-eot-gess-seub.

this person catch-PASS -HON -ANT -PAST -EPIST -HON



- Mood_{speech act}
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- Aspect_{prospective}
- Mod_{obligation}
- Aspect_{frustrative}
- Aspect_{completive}
- Voice_{passive}
- Verb**

gu buni jab -hi -si -eos-eot-gess-seub-di

this person catch-PASS -HON -ANT -PAST -EPIST -HON -EV



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- Aspect_{durative}
- Aspect_{prospective}
- Mod_{obligation}
- Aspect_{frustrative}
- Aspect_{completive}
- Voice_{passive}
- Verb**

gu buni jab -hi -si -eos-eot-gess-seub-di-kka?

this person catch-PASS -HON -ANT -PAST -EPIST -HON -EV -Q



Mood_{speech act}
 Mood_{evaluative}
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 Aspect_{prospective}
 Mod_{obligation}
 Aspect_{frustrative}
 Aspect_{completive}
 Voice_{passive}
Verb

Gu buni jabhisieoseotgessseubdikka?

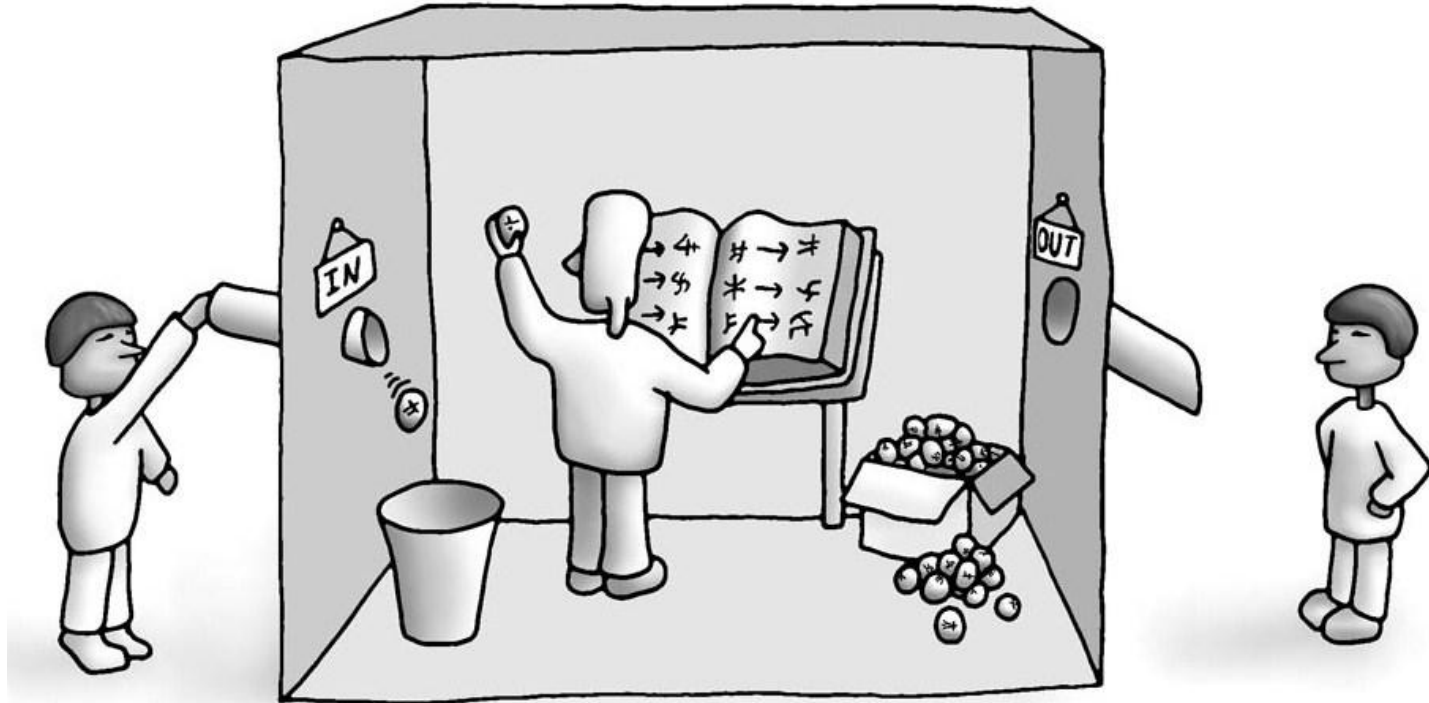
“Did you feel that he had been caught?”

(Korean)

gu buni jab -hi -si -eos-eot-gess-seub-di-kka?

this person catch-PASS -HON -ANT -PAST -EPIST -HON -EV -Q

We are aware of meaning in language



He thinks Billy bought a radio?

He thinks that Billy bought a radio?

Who does he think bought a radio?

*Who does he think that bought a radio?