Linguistics Study Guide

unfortunately created by Sarah Frank (LOL)

Notes- Phonology and Phonetics

IPA Chart:

CONSONANTS (PULMONIC)

	Bilabial	Labiodental	Dental	Alveolar	Postalveolar	Retroflex	Palatal	Velar	Uvular	Pharyngeal	Glottal
Plosive	p b			t d		ʈ ɖ	c ɟ	k ɡ	q ɢ		ʔ
Nasal	m	ɱ		n		ɳ	ɲ	ŋ	N		
Trill	ʙ			r					R		
Tap or Flap				ɾ		ɽ					
Fricative	ɸ β	f v	θ ð	s z	ʃ ʒ	ʂ ʐ	ç ʝ	x ɣ	χ ʁ	ħ ʕ	h ɦ
Lateral fricative				ɬ ɮ							
Approximant		ʋ		ɹ		ɻ	j	ɰ			
Lateral approximant				l		ɭ	ʎ	ʟ			

Where symbols appear in pairs, the one to the right represents a voiced consonant. Shaded areas denote articulations judged impossible.

Phonology & Phonetics Vocab

- Phonology: the study of how sounds pattern
- Phonetics: the study of the properties of sounds
- Sonorant- any of the nasal, liquid, and glide consonants that are marked by a continuing resonant sound
  - English sonorants: y, w, l, r, m, n, and ŋ
- Obstruents- plosive sounds (the stops, the fricatives, and the affricates)
  - English obstruents: p, t, k, b, d, g, f, s, ʃ, x, v, z, ʒ, ɣ, and affricates
- allomorph: variations of things with the same meaning (same concept as an allophone but for morphemes)
  - ex: s → z for pluralization
- allophones – different representation of a sound
  - ex: [t] → [t^h]
- fricatives: a type of consonant made by the friction of breath in a narrow opening, producing a turbulent air flow.
  - you can hold it

- sibilants: a subclass of fricatives and affricates that make a hiss sound
    - s, z, etc
- flap: tongue quickly pulls backwards hitting quickly the alvealor ridge
    - ex: the middle sound in "writer"
    - the difference is in the vowels
- glides: consonants sometimes called semi-vowels because they have very little closure
    - ex: w (voiced bilabial)
- nasal sound: sound flows out of the nose because your mouth is closed
- oral sound: sound you use your mouth for
- manner of articulation: relates to the degree of mouth closure
    - stops are made with complete closure
- spoonerism: switching consonants between words
    - ex: spill the milk → mill the spilk

Symbols in Phonology

- squiggly boy is nasal
- ^h = aspiration
- little circle underneath = voiceless
- slashes = phonemes (ex: /t/)
- brackets = actual sounds [ex: t^h = aspirated /t/ sound]

Place of articulation

- bilabial: both lips (ex: p, b, m)
- labiodental: lower lip and upper teeth (ex: f)
- dental: teeth (ex: t)
- Alveolar: right behind your teeth (ex: d s z)
- Post-alveolar: behind the alveolar ridge, usually sibilants (ex: d͡ʒ)
- Palatal: ???
- Velar: far back in mouth (ex: kuh and guh)

Classifications

- Stops/plosives: PBTDKG (peanut butter toast doesn't kill germs)
- Nasal: m, n, ŋ
- Liquids: r, l

Vowels

- i – ee (as in need)
- I – ih (as in ring)
- e – eh (went)
- eI – ay (as in skate)
- ɛ – eh (epsilon)
- ɜ - eh/uh (as in nurse or her)
- æ – eh/ah (as in hand)
- ʌ - uh (as in love) – stressed
- ə - uh (as in mother) - unstressed
- ɑ – aw (as in father)
- a – ah (as in ahhhh idk this)
- ɔ - aw (as in not)
- u – oo (as in boot)
- o – oh (as in clothing) / or oʊ
- y - [i] pronounced with your lips rounded (non-English, sounds French)
- j – y
- ʊ– uh (as in book)
- aʊ - ow (as in out)

VOWELS
Vowels at right & left of bullets are rounded & unrounded.
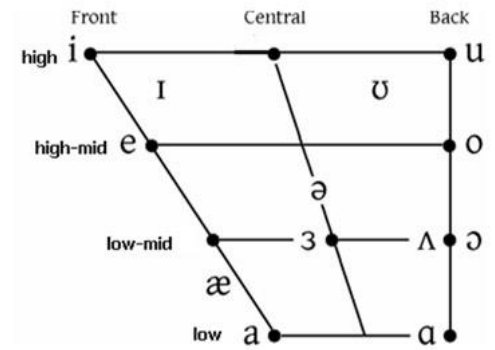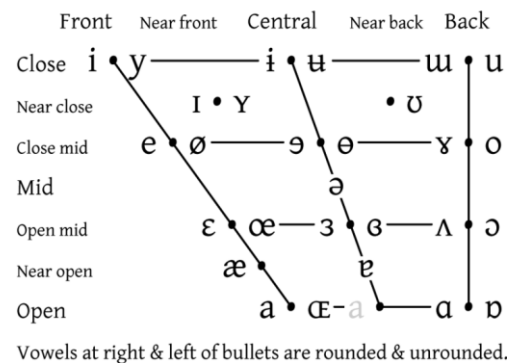
Natural Classes

- height: top vs bottom of mouth
- backness: front vs back of mouth

- tenseness: amount of effort (must know it)

  o regular-looking vowels are tense, weird vowels are lax

- roundness: roundness of lips (French vowels sound round)

- voiced/voiceless

Solving Phonology Problems

- Steps:

  o 1) Look at similarities in each data set

  o 2) Establish roots/stems

  o 3) Look at changes to roots/stems and what might be causing them

  o 4) Test the rule to see if it works

Misc Phonology

- close means high and open means low

- a is further back, a is further up

- coronal: uses flexible part of tongue (middle section of the IPA)

  o ex: s t ʃ θ

- dorsal: uses the blade of your tongue (right section of the IPA)

  o ex: k, g, etc

- word finally: at the end of a word

  o Obstruent --> - voice/ __ # (obstruents devoice word finally)

Notes- Morphology

The Basics of Morphology
- Morphology: system of word formation
- Morpheme: smallest unit of meaning
- Words are words because of common usage, not the dictionary

Morphological Processes
- Suffix: addition to the end
- Prefix: addition to the beginning
- Infix: addition to the middle
    - Circumfixes: an infix in a specific environment
- Reduplication: part or all of a word is doubled
    - sometimes with phonological changes
- Suppletion: change to a completely different stem
    - ex: is → was or go → went
- Compounding: formally, a kind of prefixation but in actually, it just combines two independent words
    - ex: blackboard
- 0 Derivation: change in grammatical category and meaning with no phonological change
    - "google" went from noun to verb
- Reversative: applies to something in order to undo an action or meaning
    - ex: "un"
- Coercion: forcing things into simpler/neighboring/applicable meanings
- Recursive: a rule can apply to its own output

Units of Morphology
- Transitive verb: a verb with an object
    - ex: "I placed the book"
- Scalar adjectives: adjectives that describe a point on or in a range
    - ex: happy

- Binary adjectives: adjectives that either apply fully or not at all
  - ex: true
- Telic verb: a verb that is a process with an end state
  - ex: build

Productivity

- A productive process: a process that applies to all words that fit the input description and the effect is predictable
  - ex: suffixation of /z/ in English to pluralize
- Blocking effect: if there is already a word for something, it's blocked from a process applying
- Reproductive morphology: cases where we can break things into morphemes BUT:
  - the semantic effect is not entirely predictable and/or
  - not all words in the relevant class allow this (exceptions)

The Wug Test

- Jean Berko Gleason did it
- "This is a wug. Now there is another one." → asks for plural word
- Kids knew to say "wugz"
- steps of language acquisition:
  - children first learn irregular forms as irregular (ex: go → went)
  - children overgeneralize (ex: go → goed)
  - they then retreat from overgeneralizing and relearn irregularities
    - the blocking effect is used

Parts of Morphological Rules

- Three parts:
  - formal part: actual rule
    - ex: suffixes
  - syntactic part: the grammatical categories
    - ex: -able makes a verb into an adjective

- o   semantic part: applications to word meanings

The case of "un"

- Negative "un": as in lower on an adjective's scale
    - o   ex: unhappy
- Reversative "un": as in to reverse a verb's action
    - o   ex: undo

Recursive Processes

- Recursive processes: a process that can apply to its own output
    - o   ex: rereredecorate or the reversative un

Misc Morphology

- Agglutinative languages: languages with very productive morphology
    - o   lots of suffixes and prefixes, packs lots of meaning into single words
    - o   Turkish is an example
- Object incorporation: incorporating an object into a verb
    - o   ex: deer hunt
- Lingua franka: someone's second learned language
- Agentive construction: a noun that denotes the do-er of the action
- Born: created, not predictable

Notes- Syntax

The Basics of Syntax
- Syntax: how words combine to give larger phrases and how the phrases pair with meanings
- Syntactic Categories: grammatical categories like noun and verb
- Distributional properties: influences syntactic categories
- A "→" in a rule means "may consist of" or "can be"
- Adj-bar: adjectives with additional characterization/more than one word
  o Adj-bar → Adj

Phrase Structure Grammar
- Phrase structure grammar: a series of rules specifying how basic expressions of various categories combine to form larger expressions
  o like prefixes/suffixes together one before another
- if it's a PSG, you can always draw rule trees

Phrase Recursion
- Example of phrase recursion:
  o S1: Roses are red
  o S2: Violets are blue
  o S1 + S2: Roses are red and violets are blue (S3)
  o S → S and S (a sentence may consist of sentences)

Verbs
- Transitive verb: a verb that happens to something
  o Ex: she places the book
- Intransitive: a verb with no object
  o Ex: she walks
- Ditransitive verb: a verb with 2 objects
  o ex: she walks the dog and the cat

Phrases

NP = noun phrase

- Noun phrase: words that collectively act as an object or subject
    - Ex: the big word
- it's a category

CP = complementizer phrase

- complementizer: words that can be used to turn a clause into the subject or object of a sentence
- For example, the word *that* may be called a complementizer in English sentences like *Mary believes **that** it is raining*.

PP = Prepositional phrase

- a modifying phrase consisting of a preposition and its object.
- At a minimum, a prepositional phrase consists of one <u>preposition</u> and the object it governs. The object can be a noun, a gerund (a verb form ending in "-ing" that acts as a noun), or a clause.
- Example: the cat **in the middle** is cute

VP Rules

- VP → V1 (often called IV: elapse, die, etc)
- VP → V2 NP (often called TV: devour the pizza, etc)
- VP → V3 NP NP (often called DTV: give the dog the bone, etc)
- VP → V4 NP PP (pit the book on the shelf, etc)
- Maybe category labels themselves are actually feature bundles
- They all have one feature 'V' but different subcategory features

Distributional Facts vs Meaning

- Not all distributional facts seem to follow from meaning
- Example: eat vs devour

- o Eat can be a transitive verb (ex: I eat pizza) or a verb on its own (ex: I have to eat)
- o Devour can be a transitive verb (ex: I devour pizza) but NOT a verb on its own (ex: I have to devour… no)
- Example: like vs dislike
  - o Like can occur with infinitival VP complements (ex: I like to play poker), gerundive VPs (ex: I like playing poker), and NPs (ex: I like poker)
  - o Dislike can't work with VP complements (ex: I dislike to play poker) but can work with gerundive VPs (ex: I dislike playing poker) and NPs (ex: I dislike poker)
- Not all facts about syntax follow from meaning

Complements + Arguments
- the things a verb combines with in the VP are complements
- complements and arguments are obligatory generally
  - o Ex: I put the book ("the book" is needed for the verb)
- Adjuncts: a thing added to something else as a supplementary rather than an essential part.
  - o they are optional
  - o are recursive
  - o used to amplify or modify the meaning of another word or words

Elaborating on English Recursion / Branching
- English is primarily right branching, meaning trees usually expand from the bottom right up to the left
- "Right branching": something takes complements on the right, such as verbs because verb complements are put on their right
  - o this is very common in English
  - o VP → V5 S
    - ▪ Ex: "Sally said Lee thinks Mary knows Loki howls" can be expanded to "Sally said Lee thinks Mary hopes Sandy knows Loki howls"
  - o S can be a complement of the right sorts of verbs

- since S itself can contain a VP with this same type of verb, we get these recursion chains
    - o right daughter is expanded on (daughter being on of the things at the bottom of the triangle)
- "Left branching": something takes complements on the left
    - o VP → VP PP
    - o N → N RC
    - o In English, modifiers (Adjuncts) tend to follow what they modify (so recursion occurs on the left)
        - two exceptions: Adj → very Adj and N → Adj N lead to recursion on the right
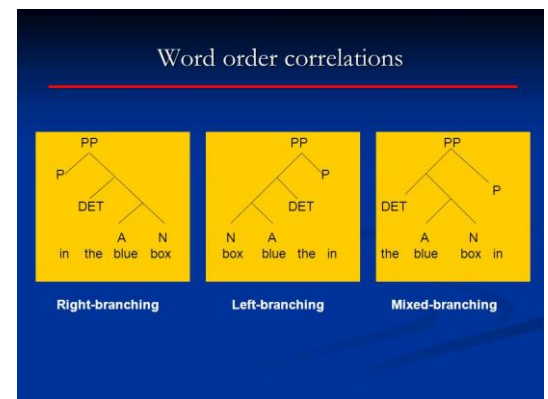
- Center embedding
    - o can also have recursion in the middle
    - o ex: a^n b ^n wit the rule S → a S A
    - o ex: mirror image languages
    - o ex: S → if S then S
    - o ex: "The rat ate the cheese." → modify rat with a relative clause: "The rat [that the cat chased] ate the cheese."
        - You could not modify the relative clause, though. "The rat that the cat [that the dog loves] chased ate the cheese."
- left and right are metaphors for temporality☺ because of course they are☺

PS grammars

- PS grammars CAN do mirror image languages
    - o a^n b^n
- PS grammars CAN'T do copy languages

- o a^n b^n c^n
- Essentially, no cross dependencies

Crossed dependencies
- there are instances of crossed dependencies in natural language
- classic case is Dutch embeds
- common in germanic languages

Rule Summary
- S → NP VP
- NP → Det N
- Adj → very Adj
- N → Adj N
- N→ N RC
- PP → P NP

Rules that can be on trees
- S → NP VP
- VP → VP PP
- VP → VP Adv
- VP → TV NP (said)
- VP → DTV NP NP (gave)
- VP → SV S (believe, think, feel)
- NP → Det N
- PP → P NP
- N → Adj N
- N→ N PP
- N → N RC (RC example: that is on the reading list)

Misc Syntax

- X → X Y or X → Y X
  - ex: Adj → very adj, N → Adj N
- In syntax, there are layers
  - movement rule: there can be a tree for the underlying structure and one for the true meaning
  - ex: "I looked the information up" vs "I looked up the information"
- Center embedding: recursion in the middle of a sentence
- RC = relative clause
- triangles in trees avoid depicting internal structure
- If you can swap two things in a sentence, they are likely the same grammatical category
  - ex: taylor sees the rabbit → taylor and "the rabbit" are both noun phrases

SF

Notes- Pragmatics

Gricean Maxims / Principles of cooperative conversation

- Quality: "be truthful"
    - it is true to the best of your knowledge
    - Example of using:
        - Person A: "Why are you late?"
        - Person B: "I'm late because the laundry machines were broken."
    - Example of breaking:
        - Person A: "You are so short." (to a tall person)
        - OR
        - Person B: "Donald Trump is so young."
- Quantity: "be as informative as possible" (up to what is necessary) and "don't be overinformative"
    - first part → scalar implicatures (ex: "warm" = "not hot")
    - requires computation of competing utterances
    - Example of using:
        - Person A: "Hey, how are you doing?"
        - Person B: "Well it all started when I was 7...." *insert whole monologue about life story*
    - Example of breaking:
        - Person A: "Go pick up the vegetarian tomatoes."
        - OR "Clean up that sticky glue you just spilled."
- Relevance: "be relevant"
    - Example of using:
        - Person A: "I want to go get hot chocolate tonight"
        - Person B: "I have a paper due"
    - Example of breaking:
        - Person A: "Is it rainy out?"

1	Quantity	Make your contribution as informative as required (do not be under-informative) Do not make your contribution more informative than is required (do not be over-informative) *Example of flouting the maxim of Quantity:* *Person 1: "Where did you go yesterday?"* *Person 2: "Somewhere on this earth."*
2	Quality	Do not say what you believe to be false Do not say what you lack adequate evidence for *Example of flouting the maxim of Quality:* *(The weather is stormy and bad outside)* *Person 1: "Nice weather."*
3	Relation	Be relevant *Example of flouting the maxim of Relation:* *Person 1: "Do you love me?"* *Person 2: "I think we should order pizza tonight."*
4	Manner	Avoid obscurity of expression Avoid ambiguity Be orderly *Example of flouting the maxim of Manner (from Attardo 1994, 272):* *Person 1: "Do you believe in clubs for young people?"* *Person 2: "Only when kindness fails" (attributed to W.C. Fields)*

- Person B: "I like the color grey."
- Manner: don't say things weirdly/out of order
    - "most of the time when you flout Grice's Maxim of Manner (be brief but unambiguous), you create an implicature about something else."
    - Example of using:
        - Person A: "Last night I ate chicken, did homework, and watched TV."
        - Person B: *assumes it took place in that order*
    - Example of breaking:
        - Person A: "Yesterday, I ate dinner, did laundry, and went out to lunch."

Scalar Implicatures

- scalar implicatures: an implicature that attributes an implicit meaning beyond the explicit or literal meaning of an utterance
    - ex: "warm" = "not hot"
    - requires computation of competing utterances

The case of "some"

- Ex 1: Jack says "How are your classes?" and Jill says "Some of them are really interesting."
    - If Jack is rational, he will assume that not all of Jill's classes are interesting to her
    - [[some]] = A B if and only if A $\cap$ B =/= ø and A$\not\subset$B … but this isn't the only meaning
- Ex 2: Jack says "How are your classes?" and Jill says "Some but not all of my courses are interesting." (or "Some of my courses are interesting but not all")
    - No feeling of redundancy even though "some" includes the meaning of "not all"
    - Test of re-enforceability
- Some = ambiguous ??
    - some1 / excSome = some and not all
    - some2 / incSome = at least some (possibly all)
    - Cancellation or reinforcing (like ex2) would be some2, the exclusive one (like ex1) would be some1

- The unlikeliness of ambiguity
  - Doesn't explain Jill's original response always being understood as excsome without additional context – would theoretically be ambiguous if the word is
  - We would need the same ambiguity with many, most, or, etc
  - All languages with words like this would have the same accidental homophony
  - The exclusive reading systematically goes away in certain contexts (for instance in contexts where the exclusive reading is plausible but absent)
    - ex: "In order to enroll in the course, you must have studied 2 years of some language offered at Purple U."
      - We read this to mean "some" as in at least one but if you read it as only one, a student might have studied more than one and wouldn't be allowed in.
- Means an amount, does not mean "not all"
- Ex: "Every student who handed in some of the homeworks passed the course." – This includes students that did all of the homeworks, making it clear that "some" doesn't mean "not all"

The case of "or"

- A or B
  - exclusive or: A and B are mutually exclusive
  - inclusive or:
- Ex: "Lee is going to Hawaii or to Paris"
  - reinforceable without redundancy: "Lee is going to Hawaii or to Paris but not both" shows that if "or" meant not both, it would be redundant
- Ex: In a prix fixe menu: "For desert you can have the flan or the chocolate cake…"
  - "…but not both." (no feeling of redundancy)
  - "…tonight is special, though, so you can have both" (no contradiction)
  - ^^ the above two additions show the meaning is not built into "or"
- "Or" is not actually ambiguous
- "Or" implicates that the "and" case is not true because the "and" case is stronger
- "Or" implicates not

- "And/or" means the same as "or" because "or" doesn't mean that they are mutually exclusive

The case of "either"

- Same as "either" – either has an stronger exclusive feel but doesn't always have to be
- Ex: "If you've eaten either all your peas or all your carrots you may have dessert." – doesn't mean you can only have dessert if you had just one or the other

The case of "if/then"

- The same as "every"
- [[if S1 then S2]] = 1 if in all situations where [[S1]] = 1 then [[S2]] = 1
    - S1 situations are a subset of S2 situations
- Ex: If you climb the mountain, you will see sleet. // Every person who climbs the mountain will see sleet.
    - They mean the same thing

Environments

- Under "every"
    - Ex: Every student who handed in some of the homework passed.
        - Doesn't exclude those who handed in all of it
- Under "no"
    - Ex: No one who hands in some of the homeworks will fall the course.
        - those who hand in all are still guaranteed to pass
    - Ex: No one who passed either the midterm or the final failed the course.
        - Xor implicature is not there—people who passed both can still pass

Simple reversal under negation

- Ex: "Not everyone left the party at midnight." implies "Some people left the party at midnight."
    - It implies but not entails. We know that because we can add to the sentence and make it change the meaning while maintaining truth value.

- o   If it's not true that no one left, some had to have left
- "Every" under a "not" = "some" / some = not every (???)

Classifying sentences

- Entailment vs implicature
  - o   entailment: definitely means something else
    - ▪ presupposition: type of entailment where a thing is assumed beforehand
      - ex: "My Ferrari is red" presupposes "I have a Ferrari"
      - test with "hey wait?"
    - ▪ at-issue: if A is true, then B is also true
    - ▪ can't be cancelled without sounding dumb
  - o   implicature: seems to mean something
    - ▪ cancellable/reinforceable
    - ▪ maxims
- Simple alt explanation
  - o   Entailment = "includes the fact that:"
    - ▪ Ex: I ate apples and bananas → I ate apples
    - ▪ can't be restated without being redundant
  - o   Presupposition = "relies on this fact being true:"
    - ▪ Ex: "I went to Disney last week" → Disney was open last week
  - o   Implicature = "gives us the idea that:"
    - ▪ Ex: "I ate 3 cinnamon rolls." → I only ate 3 cinnamon rolls
    - ▪ can be cancelled
    - ▪ sentence 2 can be repeated without being redundant

Symbols

- ⊆ = subset
- ⊄ = not a subset
- ∩ = intersection between 2 sets
- # = deviant

Sentence Strength

- If A entails B, A is stronger

- Stronger = more info, harder to be true (aka truer in less scenarios)

- Temporal window = specific time in which a meaning is understood to be true

    o If there is a smaller temporal window, the sentence is stronger

- "Ever" is only allowed when it strengthens a sentence

    o Ex: "Mitka ever ate" = not a good sentence because it doesn't add anything

- Downward entailing environments – strength is reversed

- Implicatures disappear in downward entailing environments because DE environments reverse strength

- Gricean story: If there is a competing utterance which is stronger and that utterance is not said, there has to be a reason it wasn't said

    o Stronger = gives more info

Misc Pragmatics

- If A entails B then not B entails not A

- Usually the "and" sentence entails the "or" but not always

Notes- Semantics

Structural Ambiguity

Structural ambiguity = different meanings of a sentence depending on how you construct it

- Ex: "I saw the spy with the binoculars"
    - N attachment: "with the binoculars" attaches to "spy", modifying that noun to mean the spy has the binoculars
    - VP attachment: "with the binoculars" attaches to "saw the spy" and modifies that VP

How semantics works

- Assume simpler view with PS rules, meaning any well-formed expression can be a tree
    - tree just represents how syntax proves something well-formed: each PS rule is paired with a semantic rules
- Sense vs reference
    - reference: what is picked out from the actual world
    - sense: meaning = the recipe for going from way the world might be to the individual (what you imagine, basically)
        - if you were omniscient, you would know what it really means
    - NPs can pick out the same individual but the meaning/context is different
        - ex: "the tallest man in the world right now" – we know what it means but not who it is referencing
    - VPs pick out sets of individuals
        - ex: dance is a subset of move because all dancers move
- Sentences
    - they tell us something about the world and are thus either true or false
        - we can say that their referent (or extension) is a truth value
        - set if truth values {true, false} or {1,0}
    - intension: a set of ways the world might be
- Internal structure of NPs
    - "dog" = a set of individuals vs "a dog" = an individual

- o "disobedient husky" = intersection of [[disobedient]] and [[husky]]
    - ▪ N → Adj N
- Adjectives
  - o not all adjectives intersect with nouns
    - ▪ ex: "the big flea" vs "the big elephant" shows that "big" means different things: they are subjective adjectives
      - size is always relative but need not be determined by the noun
  - o relative/subjective adjectives
    - ▪ uses comparison classes

Picking it out

- NPs- proper names, pronouns, and things pick out individuals
- VPs pick out sets
- Ss pick out truth values

Truth values

- Opinions have a truth value based on subjective parameters
- Things are true or false with reference to a judge or a subject
- Sentences pick out truth values
- 0 = false, 1 = true
- S1 → S2 and S3
  - o [[S1]] = 1 if and only if [[S2]] = 1 and [[S3]] = 1
  - o not circular—distinguish between object language vs metalanguage
- S1 → S2 or S3
  - o [[S1]] = 0 if and only if [[S2]] = 0 and [[S3]] = 0
  - o In prose: S1 is false if both S2 and S3 are false, otherwise it is true

Relative clauses

- Relative clauses can modify N
- N → N RC
- Recursive rule because RC is a modifier/adjunct (same thing)

Determiners

- "the" and "my" are examples of determiners
- determiners take a set and picks out the unique or most salient member of the set
    - the relevant individual of a set
    - ex: [[husky]] is a set and [[the husky]] is an individual
- NP → Det N, Det → the, some, every, many, few
    - complex determiner ex: at least three
    - quantificational determiners = determiners that specify an amount (such as few)

Domain restriction

- the final output of the linguistic system is usually underspecified and pragmatics come into play to give the final message
    - literal meaning: where the semantics leaves off
    - final message: interaction with the literal meaning, context, communication, etc
- ex: my dog ate breakfast → means that the dog ate breakfast today
- If the domain is widened, it has to also strengthen the sentence
    - adapted from Kadmon and Landman, 1993

Negative Polarity Items

- words that only work in a negative sentence
    - negative sentence makes a restriction
- Seemingly odd distribution
- ex: any, ever, lift a finger, drink a drop, budge a single inch, give a hoot
    - they are idiomatic
    - they always occur with negatives
- minimizers are a subclass of negative polarity items
- "no" = empty intersection between phrases
    - ex: "no husky howls" = huskies don't howl and howlers don't include huskies
- "every" = implies a subset
    - ex: "every husky howls" = huskies are a subset of the howler set

Upward entailing position

- preserves the relation of semantic strength among a set of expressions (maintains truth value)
- smaller to bigger
- switching it to a superset allows it to preserve truth
- ex: "some husky howled" → "some husky made noise"
    - VP position is upward entailing
    - doesn't work the other way because it shrinks the possibilities
- ex: "some husky howled" → "some dog howled"
    - N position is upward entailing
    - doesn't work the other way because it shrinks the possibilities
- the "→" should be able to translate to ("could lead us to reasonably believe that")

Downward entailing position

- the opposite of upward-entailing: limits the range of possibilities by going from bigger to smaller
- more common in negative sentences
- a subset subs in and doesn't guarantee the preservation of truth
- Example
    - "every dog made noise" → "every husky made noise"
    - "Lee didn't move" → "Lee didn't dance"
- "didn't VP" - picks out the complement
- the "→" should be able to translate to ("does not necessarily mean that")
- Downward entailing environments are environments where strength/info content is reversed
    - Ex: "some husky howled" is stronger than "some dog howled" or "some husky made noise"
    - no dog > no husky | every dog > every husky

Past tense and negation

- Restricts the domain
    - within a relevant time interval, X did/didn't happen
    - In the below example, it's saying that "recently, I didn't turn off the stove" where "recently" likely means that day
- Ex: "Uh oh. I didn't turn off the stove."
    - Meaning 1: It's not the case that there is a past time where I turned off the stove
        - not correct semantics
    - Meaning 2: There is a specific relevant time where I didn't turn off the stove
        - translation: there is a past time *t* where it's not the case that I turned off the stove
- Ex: "I haven't had breakfast"
    - Meaning 1: I have never in my life had breakfast
    - Meaning 2: I didn't eat breakfast today
        - Today is the interval it was restricted to

"Ever"

- Widens the interval – broadens the domain of times under consideration
- Ex: "I haven't eaten breakfast" means no breakfast today → "I haven't ever eaten breakfast" means no breakfast at any point in life
    - widened the temporal window
- If "ever" weakens the sentence or doesn't add, it's a bad sentence
    - Ex: I have eaten breakfast → I have ever eaten breakfast (bad sentence because it's a negative polarity item added to a positive sentence)

Semantics and syntactic categories

- NPs -- pick out individuals (references)
- VPs -- pick out sets
- Adj -- pick out sets
- Ss -- pick out truth values
    - S → NP VP, so [[S]] = 1 if and only if [[NP]] is a member of [[VP]]

Misc Semantics

- double brackets = meaning/reference
- metalanguage = language used to describe the semantics, which also happens to be in English
- "Every" is bad in VPs and good in the NPs (?)
- "Exactly 3" and similar things are not upward or downward entailing
- "not" reverses the entailing patterns
- If (a) is true, (b) is true → a > b
- lexical semantics: words combining to create meaning
- compositional semantics: phrases combing to create meaning
- https://docs.google.com/document/d/1MGVOiaXh0dsb83pNqjv_vAE39oYj4zVFSfwdAHAsYlI/edit?usp=sharing

SF

<u>**Notes- Linguistic Relativity**</u>

The Basics

- Linguistic relativity: one's native language influences the way people think
- Linguistic relativity is aka the Sapir-Wharf hypothesis

Problems with the theory

- What does it mean by think?
  - Categorize? Perceive? Remember? Notice?
- Translation mistakes – seeing one language through the lens of the other
  - Negative Concord dialects – double negatives is just one negative spread out with a marker (ex: "I didn't see nothing" = I didn't see anything)
- Vocabulary differences do not always mean thought differences
  - There's the myth about there being hundreds of Eskimo words for snow
- It's more about culture than language
  - Many languages don't use ego-oriented (based on people) directions like left/right but rather, use cardinal directions
- If your language forces you to make certain distinctions do you think about them differently?
  - Ex: Would a Chinese speaker be more aware of sibling ages than an English speaker?
  - Ex 2: Would a dual language speaker be more aware of two vs three objects?
    - Dual language = a language with words meaning two (like pair, couple, duo, etc)
- Do speakers of path languages vs manner languages see motion differently?
  - Speakers of path languages are forced to encode path
    - Ex: The snake slithered → The snake slithered through the garden
    - Manner is optional for path languages
  - English generally has both
  - Tests were performed with 3 conditions:
    - linguistic encoding – asked to describe the event

- free encoding – could think about whatever they wanted
- blocking of linguistic encoding – used shadowing to make sure they couldn't be thinking about it linguistically (repeating nonsense syllables)
  o The only difference in testing was that Spanish speakers were more entuned to the path and English speakers were more focused on manner

Conclusion on linguistic relativity

- The different linguistic patterns do play a role when speakers definitely encode the events linguistically
- There are no deep perceptual differences: speakers are not always attuned to seeing path vs manner since in free encoding and shadowing conditions, there were no effects of the language

Evidentials

- Many languages require verbs in main clause declaritives to be marked with a marker (like as suffix) that specifies the source of evidence
  o Do speakers of such languages pay more attention to the source of evidence?
- Some languages distinguish direct vs indirect evidence
  o Ex: Quechua in Purvian Andes
- For languages which mark direct evidence, occasionally visual evidence is marked differently
  o so there is direct visual and sirect other
- Often, direct evidence is bit explicitly marked, indirect evidence is
- Direct evidence: personal experience/knowledge
- Indirect evidence: inferential or reportative

<u>Notes- Language Change and History</u>

Why languages change

- Contact with other languages → borrowing
  - languages borrow whole sounds or sound sequences → can change the phonological systems
  - can also have syntactic borrowings
    - Ex: English borrowed Romance syntax
  - Norman Conquest → Old French became widely spoken amongst nobility and influence spread throughout English
  - as different groups spread, so do their languages
- Cases of internal instability
  - Similarly- changes can cause some parts to have irregularities which can then regularize over time
- Language play
  - ex: teen slang
  - users are conscious of the language play but not necessarily aware of what is being manipulated and its regularity

Velar Softening

- K --- S / V ___ V
  - certain forms in modern English
  - ex: public → publicity, critic → criticism, medic → medicine
  - productive phonological rule restricted to a small domain of cases

Grim's Law

- Proto-Indo-European sound rule about how PIE sounds translate to Proto-Germanic sounds
- "unvoiced IE stops became Germanic unvoiced continuants, that voiced IE stops became Germanic unvoiced stops, and that unvoiced IE continuants became Germanic voiced stops"

- PIE voiceless stops became corresponding voiceless fricatives in proto-Germanic
- The changes:
    - p in PIE → f in Germanic
    - t in PIE → Θ in Germanic (thuh)
    - k in PIE → x in Germanic → h
    - b in PIE → p in Germanic (?)
    - d in PIE → t in Germanic
    - g in PIE → k in Germanic
- PIE voiced stops became voiceless and affects the whole class
- Ex: dental → tooth

The Great Vowel Shift

- Roughly 1350-1600, many vowels shifted to other vowels but not in all positions
- Happened gradually
- Shifts:
    - High vowels → corresponding dipthongs
    - Mid (tensed) vowels → corresponding high vowels
    - ɑ → e
    - a = the ah sound became ay (ex. "make")
    - e = the eh sound became ee ("we")
    - i= the ee sound became eye ("night")
    - o= the oh sound of some words became oo ("boot")
    - o = the aw sound of some words became oh ("boat")
    - u = the oo sound of some words became ow ("out")
- Chaucer is pre-shift, Shakespeare is post-shift

| | Vowel pronunciation ||
Word	Late Middle English before the GVS	Modern English after the GVS
bite	/iː/	/aɪ/
meet	/eː/	/iː/
meat	/ɛː/	
mate	/aː/	/eɪ/
out	/uː/	/aʊ/
boot	/oː/	/uː/
boat	/ɔː/	/oʊ/