24.901 Review of Part-2

1. Quantitative Sociolinguistics (Labov)

- Ordered variation: some grammatical variable such as rhotic vs. nonrhotic speech increases/decreases along some social dimension (age, social class, gender) as well as context of speech: formal vs. informal
- Minimal pair, word list, reading style, careful speech, casual (non-monitored) speech
- Department Store Study: *fourth floor*
- Some variation is stable (t/d deletion of Wes(t) while others is dynamic leading to graduate replacement fo one category by another
- Two kinds of sound change: change from above (nonrhotic - rhotic) full public awareness and tends to show up in careful speech
- From below (e.g. NCS) : initially unconscious; initiated by lower middle class
- Young females tend to be leaders of sound change: they are most style conscious and spend time with children who follow their lead

2. NA English dialects (Labov)

- Telephone survey of over 800 speakers
- No significant ethnicity effect; but African American and Latino speech form separate dialects that do not participate in regional sound changes
- mergers expand at the expense of distinctions (Herzog)
- /hw/ and /w/: *whale* & *wail* preserved in south
- *hoarse* /oh/ vs. *horse* /ɔ/ NE & South
- *Mary-merry-marry*: lost in most areas except NYC and scattered areas of South
- Low-back merger of /o/ *cot, Don* and /oh/ *caught, Dawn* in West
- Northern Cities Shift: Buffalo – Chicago: post WW2
    - Raise [æ]
    - Fronting of merged [o, ah] of *lockes* to sound like *lax*
    - Lowering and fronting of /oh/
    - Drag chain: vowels shift to vacated position
- The dialect boundary delimited by the NCS correlates with Yankee vs. Upland Southerner settlement history and cultural/political values and attitudes seen in voting patterns and other expressions of identity

3. Tone & Autosegmental Phonology

- Tone represented on a separate tier from phonemes
- Association lines indicate synchronization

- One-many and many-one relations with contour tones and tone-spreading: Mende mbû, ngílà, and félàmà all belong to the same HL tonal melody
- African lgs: Floating tones; sandhi-rules of tone spread and deletion; downstep in Moore and Lama

  Lama: /wál rà/ -> wál râ
  /nâ rà/ -> ná rà
  /wál sèwá/ -> wál sé!wá
  /yǎl rà/ -> yàl râ
- Asian languages have larger number of levels and shapes; divide pitch space into upper and lower registers
- Tonogenesis: tonal contrasts frequently evolve from the phonologization of the small F0 differences that accompany voicing contrasts in the preceding vowel with voiceless obstruents leading to high tones and voiced obstruents to low tones; modally voiced sonorants may pattern with either
- In Zhenhai and Cham tonal contrast attracted to stressed (prominent) syllable

4. Autosegmental-Metrical model of intonation
- Metrical grid formalizes the strongest syllable in a word or phrase
- F0 Intonation contour analyzed as tonal melody composed of pitch accents (tones aligned to most prominent syllable) and boundary tones

  Declarative H* L% interrogative L* H% vocative H* 'H%

- English wh-questions with fronted wh have declarative contour while wh-in situ have nuclear (main stress): You gave **what** to Mary.
- English/Germanic languages deaccent old information: I gave her a bottle of whisky but it turns out she doesn't **like** whisky.

5. prosodic hierarchy: phoneme > (mora) > syllable > foot > prosodic word

6. syllable
- Phonotactic constraints on word edges: #tr, *#rt; rt#, *tr#
- Syllabic contexts for rules (delete r from syllable coda, aspirate voiceless stops in onset)
- Rules of vowel epenthesis (Spanish **e**stop) and consonant truncation (dam~~n,~~ ~~m~~nemonic)) ensure exhaustive syllabification
- Sonority Sequencing generalization: syllables rise is sonority from left edge and fall in sonority towards right edge: *clark*
- Sonority hierarchy: vowel > glide > liquid > nasal > fricative > stop
- English allows coronal appendices: **s**top, ac**t**, wi**ld**, six**ths**

- In most languages nucleus restricted to vowel (e.g. Spanish) while some others allow syllabic consonants: liquids (Czech), liquids and nasals (German), all consonants (Berber)
- Syllabification algorithms must take account of local and more global context
- Directional parse: left-to-right Cairene /?ultlu/ > ?ultilu) vs. right-to-left Iraqi /giltla/ > gilitha
- Sonority cascade in Berber: assign core onset-nucleus structure to any sequence YZ where Z is low vowel, high vocoid, liquid, nasal, fricative, stop

  /ra-t-lUl-t/ rat.lult /ra-t-rgl-t/ ra.tr̩.gl̩t

- In Berber the alignment of the syllable nucleus with a sonority peak is short circuited by the avoidance of hiatus; this effect has been modeled in Optimality Theory by competing constraints on well-formedness: Onset » H-Nuc

8. stress

- Metrical grid formalizes prominence; stress is not a feature; prominence interpreted by grammar as duration, pitch, intensity in language-particular fashion:

  ˌAlaˈbama ˈAberˌnathy

- Initial (Czech), Final (Farsi), penult (Polish) are common while peninitial (Lakota) and antepenult (Macedonian) are rare

- Alternating stress patterns

Maranungku	SsSs	SsSsS	S = stressed syllable s = unstressed syllable
Warao	SsSs	sSsSs	
Weri	sSsS	SsSsS	
Araucanian	sSsS	sSsSs	
Pintupi	SsSs	SsSss	
Passamaquody	SsSs	SSsSs	

  - Grid-only model maps R/L edge to peak/trough and then one-to-one; allows for stressing edgemost syllable on grid for primary vs. secondary stress
  - Provisio for special treatment of edge syllable as always stressed/unstressed
  - Foot theory parses into trochee (Ss) or iamb (sS) with (S) as marked option
  - Grouping supported by shift of stress under deletion (Yupik) and rules of allomorphy that promote exhaustive parsing: recall Latin aud-i:-mus, aper-i:-mus but fac-i-mus

- Rhythmic parses in Quantity-Insensitive languages: parameterized rules
  - Parsing direction: left-to-right, right-to-left
  - Foot type: trochee, iamb
  - Degenerate foot option: (*)
  - 8 possible languages: right-to-left iambic with initial lapse is said to be missing (but Kashaya)
- Rhythmic parses in Quantity-Insensitive languages: OT constraints
  - Parse-Syllable
  - Foot Binarity
  - All-Ft left/Right
  - Iambic/Trochaic (left/right head)
- Quantity-Sensitive parses:
  - Quantitative trochee: (Ss) = (LL) or (S) = (H)
  - Cairene: Left-to-Right trochaic: ʃajarátuhu vs. ?adwiyatúhu
  - Iambic parse: Creek: Left-to-Right iambic: amifocî, imahicîta
  - OT constraint: Weight-to-Stress: Heavy syllable is stressed

9. Constraints

- Static well-formedness constraints like Lyman's Law in Japanese (one voiced obstruent per morpheme) are not easily expressed as rewrite rules
- But cannot be confined to lexicon since they block rendaku (compound voicing): sono 'garden', hana-zono 'flower garden' but aka-**s**abi 'red rust'
- Other constraints like rising and falling sonority for syllable onsets and codas seem to trigger rules of epenthesis or deletion to impose exhaustive syllabification
- Optimality Theory replaces rewrite rules with constraints
- For a given input a set of candidate outputs is created
- A hierarchy (ranking) of constraints sifts candidate set to find output
- Constraints are conflicting: faithfulness constraints want output to resemble input while markedness constraints drive input to less marked (more optimal) output; markedness constraints may conflict as well
- Languages differ by ranking of fixed set of constraints

Continental French: Max-C, Dep-V » SonSeq	the.atr
English: Max-C, SonSeq » Dep-V	thea.tər
Canadian French: Dep-V, SonSeq » Max-C	theat < r >

- Standard OT model assumes a one step mapping between the input and output and so is challenged by many examples of derivational opacity like *writer* vs. *rider*

- Recent proposals of harmonic serialism allow an incremental input-output mapping where derivation gradually converges on output by multiple passes through the constraint evaluation stage while maintaining a fixed constraint ranking

10. Syllable Weight
    - Languages in which stress seeks out the heaviest syllable may have more than one degree of weight and pose look-ahead problems for traditional rewrite-system where metrical structure is built up gradually
    - Kelkhar's Hindi: stress rightmost heavist syllable; in case of tie stress rightmost nonfinal heaviest
        - Hierarchy: CVVC (S) > CVV, CVC (H) > CV (L)
        - Heaviest: ré:zga:ri: ['SHH] só:xjaba:ni: ['SLHH] inqilá:b [HL'S]
        - Ties: samîti [L'LL] ka:rî:gari: [H'HLH]
        - Analysis: Peak Prominence » Nonfinality » Rightmost » Leftmost
        - Peak Prominence: *ˈL » *ˈH » *ˈS
        - Tableaux

/ka:ri:gari:/	*ˈL » *ˈH » *ˈS	Nonfin	Rightmost	Leftmost
ˈs s s s	*		s s s !	
> s ˈs s s	*		s s	
s s ˈs s	*!			
s s s ˈs	*	*!		

    - Kobon (New Guinea
        - Vowels i ɨ u
          e ə o
          a
        - Stress falls in disyllabic window at right edge of word
        - Stress seeks out stronger vowel on sonority scale: peripheral > central, low > mid > high:
            - a > e hagápe
            - a > i ki.á
            - o > i si.óg
            - u > ə lú.əl
            - ə > ɨ gɨsə́
        - Ties: penult (trochaic » iambic)
            - jînup kɨjîgɨl
        - Ranking: *stressed central » *stressed peripheral » *stressed high » *stressed mid » *stressed low » trochaic » iambic

11. Prosodic Morphology: morphological processes of affixation, truncation, infixation, reduplication, and shape change that depend on the prosodic structure of the base.

- Formalized in terms of CV templates
- Ilocano reduplication prefixes a CCVC (maximal syllable) template and phonemes are mapped to matching slots in the template
- Prosodic Morphology Hypothesis states that templates are "natural" units of prosody such as minimal, maximal syllable, iambic or trochaic foot
- Japanese H, LL template for hypocoristics: ti -> tii-chan, kinsuke -> kin-tyan:
- Arabic broken plurals: jundub -> janaadib

/jundub/	/jaziir/	
{jun}dub	{jazi}ir	parse trochee at left edge
{junuu}dub	{jazaa}ir	reparse as LH iamb
junuudub	jazaa?ir	restore residue
janaadib	----------	change vowel melody

- In Optimality Model constraints on templates are hypothesized to follow from a ranking of constraints on prosodic shape that is ideally independently motivated in the grammar

12. Loanword Phonology

- Modeled as resolution between conflict to remain faithful to the source word while also satisfying the constraints on sound inventory and phonotactics in the receiving language
- Different repairs emerge for the same violation: CVC Cantonese adapts *pump* with deletion as [pɐm] but *tips* as [tipsi] with epenthesis
- Some notion of perceptual salience seems to play a role: [s] has cues internal to the frication while /p/ of *pump* may lack them
- Do Cantonese speakers fail to here the final p of *pump* or do they judge that [pɐm] with zero correspondent is more similar to *pump* than [pɐmpi] would be while for *tips* [tipsi] is judged more similar than *tip*?
- Goal is to develop general theory of phonological similarity from which these calculations could be derived
- While in some cases adaptation apparently occurs at abstract phonological levels (e.g. English flap of *caddy* is loaned as /kadi/ in Mexican Spanish) in other cases the adaptation takes account of noncontrast (but salient) information as in *canto* > Mandarin [kɑngtuo] to preserve the redundant but salient vowel quality at the cose of the distinctive but less salient nasal coda place feature

3. Passamaquoddy (LeSourd 1993):

wás-is 'child' dimin.	wás-ís-ek 'children'
pém-skót-e-k 'field'	pém-skot-é-k-il 'fields'
tópkwan 'soil'	tópkwán-amkw 'soil' particulate
l-éwésto 'he speaks'	wík-ewésto 'he likes to talk'
séhtáy-ewésto	'he speaks while walking backwards'
wícohké-m-a-l	'he helps the other'
wícóhke-kémo	'he helps out'
wícohké-tahá-m-a-l	'he thinks of helping the other'
téhsáhkw-apás-oltí-ne	'let's (pl.) walk around on top'

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