Pomoan Stress: Change, Contact, and Reanalysis

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Miniconference on Metrical Structure: Acquisition and Processing

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Outline of talk

• stress markedness
  – what theories seem to predict about change
• Pomoan stress
  – reconstruction of proto stress
  – synchronic patterns
• changes that have occurred
  – generalizations and analysis
• adjacent languages
  – likely contact influences on reanalysis
• implications for learning
  – responses to ambiguous generalizations
  – factors and biases in reanalysis
Metrical typology

• cross-linguistic stress patterns
  – what is common, rare, and unattested
  – next question is what the theory should say about this

• some conceivable patterns are surely impossible
  – default stress on the fourth syllable, or pre-antepenult
  – primary stress on middle syllable of any word
  – stresses on 2nd, 3rd, 5th, 8th syllables

• a theory that predicts any such system is dubious
  – so there are some patterns that should be excluded
  – are they formally impossible to represent?
What is markedness?

• some theories exclude certain more plausible patterns
  – left-edge extrametricality
  – quantity-insensitive iamb

• even if permitted, they are still typologically uncommon
  – what does this imply about their formal status?
  – are they possible to represent, but somehow more complex?
  – is there a learning bias against them?

• diachronic change as a window into acquisition
  – overall trajectory reflects what is learned each generation
  – if uncommon patterns persist,
  – can they really be “marked” to the learner?
Pomoan family

- seven languages in northern California
  - time depth compared to Germanic
- presents useful testing ground
  - proto-stress pattern is somewhat unusual
  - stress on second syllable regardless of weight
  - though does not move beyond the root
- variety of changes in descendents
  - maintained (nearly) intact in several
  - more significantly modified in others
  - radically changed in one of them
- what happened during language transmission?
  - what does this tell us about learning stress patterns?
Pomoan in the world
Pomoan languages
Internal relationships

Proto-Pomo

Western Branch

Southern Group

Kashaya  Southern  Central  Northern  Northeastern  Eastern  Southeastern
Proto-Pomo

• reconstructed by McLendon (1973)
  – I’ll mainly accept her assumptions
  – but will make certain minor changes unrelated to stress
• proto-language probably located around territory of E and SE languages
  – Clear Lake region
• phased movements
Evidence for proto-stress

• actual location of stress in modern languages
  – N, E, SE, C are relatively consistent
  – NE also lends some support
  – K and especially S are now quite different
• aphesis of initial unstressed syllables
  – complete loss with initial /ʔ, h/
  – pervasive in all languages except K, S, sometimes NE
  – even K, S have it to a more limited degree
• vowel deletion in initial unstressed syllables
  – retention of non-laryngeal onset consonant
  – common in C, pervasive in SE
• syncope in post-tonic syllables
  – precedes change in K, S stress patterns
## Stress on second syllable

<table>
<thead>
<tr>
<th></th>
<th>‘duck’</th>
<th>‘bear’</th>
<th>‘woman’</th>
<th>‘angelica’</th>
</tr>
</thead>
<tbody>
<tr>
<td>K</td>
<td>q’ajál</td>
<td>buṭaqá</td>
<td>?ima:ta’</td>
<td>baʔtʃ’owá</td>
</tr>
<tr>
<td>S</td>
<td>k’á:jan</td>
<td>bu:ṭáka</td>
<td></td>
<td>baʔtʃ’ówha</td>
</tr>
<tr>
<td>C</td>
<td>k’já:n</td>
<td>p’ṭáka</td>
<td>má:ta</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>k’aján</td>
<td>bitá:</td>
<td>má:ta</td>
<td>batʃ’ówa</td>
</tr>
<tr>
<td>NE</td>
<td>k’ajá:-</td>
<td>bóro-</td>
<td>himá:ta</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>q’a:já:n</td>
<td>bu:ráqal</td>
<td>má:- archaic</td>
<td>ba:k’ó:</td>
</tr>
<tr>
<td>SE</td>
<td>k’ján</td>
<td>bṭéqal</td>
<td></td>
<td>?k’ó-b</td>
</tr>
<tr>
<td>PP</td>
<td>*q’a:ján</td>
<td>*bu:ṭáqa(l)</td>
<td>*ʔimá:ta</td>
<td>*baʔk’ówa</td>
</tr>
</tbody>
</table>

*excluding K, S, sometimes NE: the languages show stress on second syllable*
### Loss of first syllable

<table>
<thead>
<tr>
<th>K</th>
<th>S</th>
<th>C</th>
<th>N</th>
<th>NE</th>
<th>E</th>
<th>SE</th>
<th>PP</th>
</tr>
</thead>
<tbody>
<tr>
<td>huʔúj</td>
<td>húʔuj</td>
<td>?új</td>
<td>?új</td>
<td>?új</td>
<td>?új</td>
<td>*huʔúj</td>
<td></td>
</tr>
<tr>
<td>ṭihpʰúj</td>
<td>ṭíhpʰuj</td>
<td>pʰúj</td>
<td>pʰúj</td>
<td>fí:</td>
<td>pʰúj</td>
<td>*ʔihpʰúj</td>
<td></td>
</tr>
<tr>
<td>ṭohoʾ</td>
<td>ṭóh:o</td>
<td>hó</td>
<td>hó</td>
<td>ṭóho</td>
<td>xó</td>
<td>χó</td>
<td>*ʔohχó</td>
</tr>
<tr>
<td>ṭahqʰaʾ</td>
<td>ṭáhkʰa</td>
<td>kʰá</td>
<td>kʰá</td>
<td>kʰá</td>
<td>xá</td>
<td>χá</td>
<td>*ʔahqʰá</td>
</tr>
</tbody>
</table>

*initial syllable must have been unstressed – therefore 2nd syllable was stressed*
Pomoan instrumental prefixes

- around 20 prefixes of the shape CV
  - express manner, cause, or object of action
    *bi- ‘by collecting, by encircling, by sewing’
    *pʰu- ‘by blowing, by floating in the air’
    *qa- ‘between two forces, by biting’
- overwhelmingly common in verbs
  - K dictionary contains 4220 verb stems
  - of these, 3750 (or 89%) are prefixed
  - also in nouns derived from such verbs
- here the root is the second syllable of the word
  - stress aligned with left edge of root: σ{σσ
  - location can be expressed by reference to morphology
# Prefixed verbs

<table>
<thead>
<tr>
<th></th>
<th>‘bite’</th>
<th>‘carry’</th>
<th>‘fly, float’</th>
<th>‘smell, stink’</th>
</tr>
</thead>
<tbody>
<tr>
<td>K</td>
<td>qane-</td>
<td>biʔdi-</td>
<td>pʰudi-</td>
<td>mihʃe-</td>
</tr>
<tr>
<td>S</td>
<td>ka:ne-</td>
<td>biʔdi-</td>
<td></td>
<td>mehʃe-</td>
</tr>
<tr>
<td>C</td>
<td>ka:né-</td>
<td></td>
<td>pʰdé-</td>
<td>mʃé-</td>
</tr>
<tr>
<td>N</td>
<td>kané-</td>
<td></td>
<td>pʰide-</td>
<td>mʃé-</td>
</tr>
<tr>
<td>NE</td>
<td>kána-</td>
<td></td>
<td>fuʔdú-</td>
<td>méhʃe-</td>
</tr>
<tr>
<td>E</td>
<td>qa:né-</td>
<td>bi:dí[:l]</td>
<td>pʰu:dí-</td>
<td>mi:ʃé-</td>
</tr>
<tr>
<td>SE</td>
<td>qné-</td>
<td>bdéy-</td>
<td>-di-</td>
<td>mxé-</td>
</tr>
<tr>
<td>PP</td>
<td>*qa:-né-</td>
<td>*bi-ʔdí-</td>
<td>*pʰu-dí-</td>
<td>*mi-hʃé-</td>
</tr>
</tbody>
</table>

*like disyllabic roots, these take stress on second syllable of the word*
Post-tonic syncope

• deletion of a vowel in the (unstressed) third syllable
  – complements evidence that stress was not initial
• still-productive syncope in S:
  – /ʔa-hťa-mok-a/ → ʔahtʃámko ‘flew into’
  – can’t depend on modern penultimate stress: *ʔahtʃamóko
• similar pattern, but lexicalized, in K kinship
  – mi-ʔɪkí ‘your younger sibling’ < *mi-ʔíki ?
  – mi-tʃú-ʔ’ki ‘your sister’s son’ < *mi-tʃú-ʔ’iki ?
• might also explain an ablaut pattern in K kinship
  – stem with long vowel if monosyllabic prefix, otherwise short
    • mi-de-ki’ ‘your older sister’ < *mi-dé:ki ?
    • dikí-n’ ‘my older sister’
    • miyá:-diki ‘his older sister’
  – i.e. long vowel if stem starts at second syllable
# Monosyllabic stems

<table>
<thead>
<tr>
<th></th>
<th>‘come’</th>
<th>‘hear’</th>
<th>‘leave’</th>
<th>‘claw’</th>
</tr>
</thead>
<tbody>
<tr>
<td>K</td>
<td>wa:d-uˊ</td>
<td>ʃotʃ-</td>
<td>q’a:-ˊ</td>
<td>he:tʃ’ˊ</td>
</tr>
<tr>
<td>S</td>
<td>hwá:d-u</td>
<td>ʃo:tfi-</td>
<td></td>
<td>hé:tʃ’</td>
</tr>
<tr>
<td>C</td>
<td>wá:d-</td>
<td>ʃó:tf-</td>
<td></td>
<td>?é:tʃ’</td>
</tr>
<tr>
<td>N</td>
<td>wá:d-</td>
<td>ʃó:-</td>
<td>k’á-</td>
<td>héts’</td>
</tr>
<tr>
<td>NE</td>
<td></td>
<td></td>
<td></td>
<td>hé:tʃ’a</td>
</tr>
<tr>
<td>E</td>
<td>wád[u:ki]</td>
<td>ʃó:kʰ</td>
<td>q’á-</td>
<td></td>
</tr>
<tr>
<td>SE</td>
<td>(xkó-)</td>
<td></td>
<td>q’á-</td>
<td></td>
</tr>
<tr>
<td>PP</td>
<td>*(h)wá:d-</td>
<td>*ʃó:k-</td>
<td>*q’á(:)-</td>
<td>*hé:ts’</td>
</tr>
</tbody>
</table>

Here stress is on the first syllable – it can’t be assigned past the root.
Proto-Pomo stress

• appears to be regular
  – though best evidence comes from nouns
• stress on 2nd syllable of word
  – whether prefixed or not
  – {σσ́ , σ{σ́
• but stays on an initial monosyllabic root
  – {σ́}σ
  – no reconstructed prefixed roots with two syllables
    • but in the relevant daughter languages,
      • stress remains on first root syllable regardless of word length
• initial stress in vocative of kinship terms?
  – limited evidence; will set this aside
Analysis of PP stress

• prefixed stems could refer to morphology
  – stress aligned with left edge of root: \( \sigma\{\sigma\sigma \)
  – possible source of “2nd syllable” generalization
  – but once established, it requires a phonological analysis

• no reference to vowel length or closed syllables
  – requires left-edge extrametricality: \(<\sigma>(\sigma\sigma \)
  – or quantity-insensitive iamb: \((\sigma\sigma)\sigma \)
  – either approach is uncommon and marked

• monosyllabic stems are also aligned to the root
  – there just happens to be no prefix: \(\{\sigma\}... \)
  – in the relevant daughter languages, stress remains on this root syllable despite addition of suffixes
Modern stress: Eastern Pomo

- mainly the same as proto language
- second syllable of most words
  - including all prefixed roots
  - alternating secondary stress
- first syllable
  - monosyllabic roots (some by aphesion)
  - certain disyllabic stems have to be lexically marked
Eastern Pomo second syllable

• instrumental prefixes are now CV:
  – many of these derive from *CV{hCV or *CV{ʔCV
  du:{qá}ţ'ki: ‘pull off, pluck’
  ma:{t’ó}qaja ‘roasted (the meat)’
  ka:{lú}:ski: ‘sit on something sticky’
  bi:{dí}m ‘hold in hand without moving’
  – no reference to vowel length in placement on 2nd syllable
• similar in most words with no apparent prefix
  bu:ráqal ‘bear’
  di:lé ‘forehead’
  qa:lí ‘sky’
Eastern Pomo initial stress

• unpredictably on first syllable for certain words
  káju    ‘at the beginning’
  dú:ʃux  ‘quiet’
  ts’á:mal ‘fly’

• some are historically from aphesis
  ṭʰíja    ‘big’    < *ʔahṭʰíj
  ṭʰó:no   ‘seaweed’ < *ʔo:ṭʰóno

• all the numbers have initial stress
  k’áli   ‘one’
  lé:ma   ‘five’
  ts’á:di ‘six’
  hádaqal ‘ten’
Eastern Pomo loanwords

• some likely from neighboring languages
  háju     ‘dog’     (widely diffused)
  hí:baja  ‘men’     (identical to NE Pomo)

• initial stress in more recent loanwords
  – similar to SE Pomo; some perhaps borrowed through it
  káhonʔ   ‘box’     < Sp. cajón
  kálawa   ‘nail’     < Sp. clavo
  pásalʔ   ‘to visit’ < Sp. pasar
  pápelʔ   ‘paper’    < Sp. papel
  rí:koʔ   ‘rich’     < Sp. rico

• whatever the source, they exist
  – lexical exceptions to left-edge extrametricality?
Eastern Pomo initial CVC

• initial CVC is not frequent, but takes stress
  – could stress be attracted to VC but not to V: ?
  – perhaps (historical) compounds and reduplicated roots, now lexicalized
    bóṭʰqo        ‘forearm’
    líkʰlikʰ      ‘sparrow hawk’
    ťíχṭiχ        ‘snipe’

• verbs with initial CVC are monosyllabic roots
  – therefore expect initial stress anyway
    {ká}mli:       ‘tip over, wreck (a car)’
    {ʔé}ṭʃʰki:     ‘sneeze’
Eastern Pomo analysis

• general Pomo pattern
  – left-edge extrametricality
  – stress at left edge of domain
  – blocked by monosyllabic, unprefixed root
• lexical exceptions
  – extrametricality blocked for certain roots
    • more common than in some other Pomoan languages?
  – includes classes such as loans and numbers
• heavy initial syllables
  – might be true weight sensitivity
    • though not evident in other contexts, or with CV:
  – probably just marked as exceptions like the other cases
Modern stress: Northern Pomo

- similar to proto language
- second syllable of disyllabic roots
  - as well as prefixed monosyllables
- first syllable of monosyllabic root
  - including where aphesis has occurred
- pitch accent realization
  - predictable based on syllable structure
Northern Pomo second syllable

- **disyllabic (or longer) root**
  - `{diléj}` ‘all’
  - `{batʃ’ówa}` ‘angelica’
  - `{da:wák}a` ‘go out’
  - `{duhú}doj` ‘they say he left’
  - `{kawí}namjatʃuʔ` ‘of the child’
  - `{miná}tʃinhe` ‘I heard (the baby) cry once’

- **prefix, yielding disyllabic stem**
  - `si{jú:}tʃin` ‘recognize taste (of liquid)’
  - `mi{ʃé:}tal` ‘be feeling (emotion)’
  - `da{šéj}` ‘wash’
  - `da{ts’áp}na` ‘must have slapped’
Northern Pomo first syllable

• monosyllabic root
  \{pʰó\}moʔo 'marry each other'
  \{ṭʰáʔ\}a 'play (COLLECTIVE)'
  \{tfá\}nhe 'I heard it jump (in the water)'
  \{lók\}tə 'fall, drop multiple times'

• historical apheasis
  \{má:ta\} 'woman' < *ʔimá:tə

• other reasons, such as onomatopoeia?
  \{xó:ta\}manhe 'I hear him snoring'

• analysis has to permit some exceptions
  – no initial extrametricality, or an underlying stress
  – but most forms can be generated quite regularly
Northern Pomo analysis

• general Pomo pattern
  – left-edge extrametricality
  – stress at left edge of domain
  – blocked by monosyllabic, unprefixed root
• exceptions appear to be quite limited
  – though stress is often not written in sources
• realized with predictable pitch accent
  – rising on short V and most VC
  – falling on short VC = laryngeal or ejective
  – falling on V:
Modern stress: Central Pomo

- similar to proto language
- second syllable of disyllabic roots
  - as well as prefixed monosyllables
- first syllable of monosyllabic root
  - including where vowel deletion has occurred
  - therefore more often word-initial
Central Pomo second syllable

- **disyllabic (or longer) roots**
  - `{matúl}` ‘old lady’
  - `{maʔá}` ‘food’
  - `{masá:nja}` ‘white (person)’
  - `{tʃa:nó}:n` ‘talks’
  - no effect of vowel length

- **syllabic prefix, yielding disyllabic stem**
  - `ba{yí}:tʃ´` ‘learned to talk’
  - `ʃa{ʔá}:ma:tʃatʃ` ‘(we) used to gather’
  - `qa:{wá}:tan` ‘eat (habitually)’
  - `da{lí}:da{li}w` ‘wave the hand’
Central Pomo first syllable

- **monosyllabic roots**
  - {lów}a:tʃ’a:tʃ’ ‘(we) don’t talk’
  - {mí}taq’ ‘they say’
  - {tʃá:ʔ}jem ‘old man’

- **historical vowel deletion, in prefix or within root**
  - m{ʃé}m{ʃe}w ‘sniff at’ < *mihʃé-
  - {ʃdí:jaw ‘carried (the body)’
  - {ʔwéni} ‘yesterday’ < *duwéni

- **initial in loanwords, or other reasons**
  - {sómle:lo} ‘hat’ < Span. sombrero
  - {háju} ‘dog’ locally diffused
  - {híntil} ‘Indian’
  - {ʔúda:w} ‘lots’
Central Pomo analysis

• general Pomo pattern
  – left-edge extrametricality
  – stress at left edge of domain
  – blocked by monosyllabic, unprefixecl root

• lexical exceptions
  – extrametricality blocked for certain roots
  – predictable in presence of initial CC cluster
    • extrasyllabic C blocks extrametrical syllable?

• more examples of stress on first syllable of word than in E and N
Languages with 2nd syllable stress

Proto-Pomo

Western Branch

Southern Group

Kashaya  Southern  Central  Northern  Northeastern  Eastern  Southeastern
Modern stress: Southeastern Pomo

- stress is always initial
  - historical loss of first vowel or syllable
- remains on same syllable as in proto language
  - but simpler synchronic generalization
- no long vowels
  - the only Pomoan language to lose distinctive length
Southeastern Pomo diachrony

• initial unstressed syllables lose vowel
  *seʔé  >  sʔé  ‘chaparral’
  *nahpʰó  >  mfó  ‘people’
  *mihján  >  mján  ‘throat’
  *baːlaj  >  bláj  ‘blood’

• complete aphesion with laryngeal onset
  *hiːmó  >  mó  ‘hole’
  *hiʔbál  >  bál  ‘tongue’
  *ʔohó  >  hó  ‘fire’
  *ʔahχáj  >  χáj  ‘wood’

• initial stressed syllables are maintained
  *tʃ’áj  >  ts’áj-ts’aj  ‘scrub jay’
  *q’á(:)-  >  q’á-  ‘leave (behind)’
Southeastern Pomo first syllable

- **native words with initial stress**
  - regardless of word length
  - xéla ‘friend’
  - xélataj ‘friends’
  - tsáqlamat ‘it flew to the ground’
  - dáqalhojqat ‘(one) gathers into pile’
  - háliqmattat ‘(two) discuss, plan’

- **same in Spanish borrowings**
  - regardless of stress in source language
  - sómlilu ‘hat’ < sombrero
  - mántikija ‘butter’ < mantequilla
  - ?áwha ‘needle’ < aguja
  - pílatu ‘dish’ < plato
Southeastern Pomo secondary

• evidence only for a stress on the first syllable
  – no report of iterative secondary stresses
    (háliq)mattat ‘(two) discuss, plan’
    *? (háliq)(màttat)
• secondary stress in compounds
  – left-headed at higher level
    χó kàleta ‘train’ (fire wagon)
    ţ’ó qàtslulu ‘collarbone’
    sápatu kìn ‘shoestring’
• very simple generalization of “first syllable”
  – loss of unfooted material at the beginning of the word
  – or simply “pre-tonic” to be neutral about footing
Degenerate feet

• limited evidence for syllable weight
  – vowel length from proto-language was lost
    • although marginal in later borrowings
  – copious degenerate feet on short open syllables
    • including under clash in compounds
• but with directional prefixes, they are avoided
  mó-ʃnèt = (móʃ)(nèt) ‘put belt on someone’
  mó-net = (móne)t ‘lean something against’
• subminimal feet are cross-linguistically disfavored
  – already common in Proto-Pomo?
    • e.g. *ʔah(šá) > (xá) ‘fish’
  – even more common with the loss of vowel length
    • though SE still avoids them in limited circumstances
Modern stress: Northeastern Pomo

- less consistent with proto language
- often second syllable of disyllabic roots
  - as well as prefixed monosyllables
- but first of many disyllabic roots
  - apparently prior to aphesis
- tendency to penult?
  - open questions
Northeastern Pomo second syllable

• in some disyllabic (or longer) roots
  – matches proto stress
    \{ʃahkó}ka: ‘grasshopper’ < *ʃahqót
    \{himá:ta\} ‘woman’ < *ʔimá:ta
    \{ʃiʔbá\} ‘body’ < *ʃiʔbá
    \{ʔahá:\} ‘wood’ < *ʔahχáj

• syllabic prefix, yielding disyllabic stem
  fu\{ʔdí} ‘float’ < *pʰu-ʔdí
  fu{ʔdí}ma ‘lay (rock) down’
Northeastern Pomo first syllable

• in some disyllabic roots
  – has shifted leftward from proto stress
    {dúwe} ‘night’ < *duwwé
    {béhʃe} ‘deer’ < *bihʃé
    {táno} ‘speech’ < *kahnó
    {ʔóho} ‘fire’ < *ʔohχó
    {máʔa} ‘acorn’ < *maʔá

• monosyllabic roots
  – often from apheisis, based on proto stress
    {ʔá} ‘horn’ < *haʔá
    {fó:} ‘magnesite’ < *ʔipʰó:(l)
  – no apheisis if stress shifted leftward: {ʔóho}
Northeastern Pomo variation

• same forms with stress on 1st or 2nd
  – cited without a difference in context
 ʃúʔu-ka: ~ ʃuʔú-ka: ‘coyote’
ʃími: ~ ʃimí: ‘bow, gun’
málaʔ ~ maláʔ ‘ashes’
béhʃéra ~ behʃéra ‘hug’
ʃúhṭan ~ ʃuhṭán ‘open (a door)’
dúhʃu-ka: ~ duhʃú-ka: ‘grayback (insect?)’
Northeastern Pomo penultimate?

• possible tendency for penultimate stress
  – based on shift under suffixation

 Jáma  ‘sleep’
 Jáma:-ka  ‘go to sleep!’
 Má:ti  ‘day’
 Ma:tí-min  ‘sunrise’
 Hú?ba:  ‘tongue’
 Hu?bá:-wi  ‘with the tongue’
 Bó?lau ?úla:  ‘puppy’ (dog child)
 Bo?láu-ka:  ‘dog’
Northeastern Pomo non-shifting

- but some root stress appears to be stable
  - if we can rely on somewhat limited data
    - tʃ’íjit taʔdéi ‘bird nest’
    - tʃ’íjit-ka: ‘bird’
    - ʃúʔut ditʃó:tʃo ‘snake’s rattle’
    - ʃúʔut-ka: ‘(rattle)snake’
    - fuléy-en ‘to burn’
    - tʃí:ya fuléy-kalba ‘let it burn’
    - tuhúl-a? ‘north wind’
    - tuhúl ‘towards north’
Northeastern Pomo transcriptions

- some inconsistency in transcriptions
  - really two stresses in all these words?
    \[\text{ʃǐmitiʔ}\] ‘did (you) listen?’
    \[\text{ʃǐmitíʔle}\] ‘(what) do (you) hear?’
    \[\text{ʃǐmitílda}\] ‘did (you) hear?’
    \[\text{ʃǐmitkā:li} \sim \text{ʃǐmitka:li}\] ‘so that (you) will hear’

- penult in long word may not be the only stress
  - are these words stressed on both 1st and penult?
    \[\text{dúʔbutkuʔle}\] ‘did (you) hide it?’
    \[\text{duʔbutkú:tfá}\] ‘hide yourself!’
Northeastern Pomo rhythm?

• may shift between 1st and 2nd syllables – depending on overall rhythm of sentence
  jilíma ‘sit down!’
  żáma jilíma ‘you sit down!’
  mahkú:i ‘handkerchief’
  tína: máhku:i ‘kerchief for head’

• possible effect of syllable weight
  hímo ‘hole’
  hímo-wa ‘out of a hole’
  tína: ‘head’
  tiná:-wa ‘from the head’
Northeastern Pomo variation

• tentative hypothesis
  – rhythm does influence shifting stress
    • also variation in left- or right-headed word?
  – between 1st and 2nd, with iterative effects
  – possibly also affected by vowel length
  – and perhaps a particular social meaning
    • a system in transition?

hájo: ŋoʔk’ómon ‘cut off a leg’
héle ŋoʔk’omú:tʃ’a ‘cut off your hair!’

• but at present, pattern remains uncertain
Modern stress: Southern Pomo

- regular penultimate stress
  - reported to be on the phrase, not just the word
- outlier in Pomoan
  - right-orientation
  - all others are left-oriented (but NE?)
- secondary stress
  - on alternating syllables preceding the penult
Southern Pomo penult

• main stress on penult
  \( k^h \text{áʔbe} \) ‘rock’
  \( k^h \text{aʔ}(\text{bé-ʔwan}) \) ‘rock-DET.OBJECT’
  \( k^h \text{aʔ}(\text{bé-jej}) \) ‘Rock (Man)-AGENT’

• clashing secondary stress in trisyllables
  – transcribed explicitly for just a few words
  – but described as a general pattern
  \( (\text{bù:})(\text{ťáka}) \) ‘bear’
  \( (\text{kit})(\text{tsídu}) \) ‘small (COLLECTIVE)’
Southern Pomo phrasal

• phrasal stress
  – can include enclitics and multiple words
  
  \[(bàh)(\text{ž}^{h}é=k’o)\] ‘with many’

  \[(sí:ma) (p^{h}i?t’a)(wá?=to)\] ‘I feel sleepy’

  ‘when it came to make (noise) I heard it’

• alternation in stress due to phrasal context
  – I’ll return to this later
  
  \[(béhše)\] ‘deer’

  beh(šè dah)(lá:li) ‘deer, I think’
Southern Pomo analysis

• quantity-insensitive trochees, primary stress at right
  \( (\dot{o}\sigma) (\dot{o}\sigma) (\dot{o}\sigma) \)
  – iterative from right to left, a very common pattern
• can be constructed across phrases
  – shares this property with Kashaya
• antepenult in trisyllables is stressed, and typically heavy
  \( (\dot{o}) (\dot{o}\sigma) \)
  – historically, to meet a minimum size of two moras?
  – if correct, would simplify some reconstructions
• not clear whether this foot occurs in longer words
  – theories would generally predict it
  \(? (\dot{o}) (\dot{o}\sigma) (\dot{o}\sigma) \)
Modern stress: Kashaya

• most complex of all
  – but still left-oriented
• iambs from the left
  – first syllable is extrametrical
  – unless that would leave the root unfooted
• clear quantity sensitivity
  – unlike the other languages
  – special role for long vowels
Kashaya iambic feet

- extrametricality of first syllable by default
  - stress on 2nd syllable if heavy, else 3rd
  - iambic lengthening of (most) stressed vowels
    - main evidence for secondary stress feet
- true of unprefixe disyllabic roots
  - {qaʔtʃ’áṭ’}kʰetʰin  ‘shouldn’t cry’
  - {qaʔtʃ’at}á:dutʃe:du  ‘used to cry and cry’
- as well as all prefixed roots
  - whether the root is monosyllabic or longer
    - tʃa{qʰá}μuʔ  ‘cut pieces apart from each other’
    - tʃa{qʰam}á:lawi:biʔ  ‘start to cut downward’
    - bi{lukú}mciʔ  ‘eat with one’s mouth closed’
Kashaya monosyllabic root

- extrametricality is blocked
  - as in the other Pomoan languages
    - {kél}mula:dutʃe:du ‘keep peering around’
    - {mo}mú:litʃ’e:du ‘run in circles’
    - {tʃad}ú:tʃedun ‘while looking’

- but the root itself is often unstressed
  - the foot (not the stress) has to overlap the root
  - evaluated via the vowel, as the stress bearing unit
    - * {tʃad}utʃé:dun = tʃa(dutʃé:)dun

- the other languages keep stress on the root
  - same formal statement if they are trochaic
Kashaya analysis

• iambic feet from left to right
  – extrametricality by default
• retains much of general Pomo pattern
  – left-edge extrametricality
  – stress at left edge of domain
  – blocked by monosyllabic, unprefixied root
• syllable weight plays central role
  – unlike in most of the other languages
• lexical exceptions
  – extrametricality blocked for a few roots
  – also fixed stress on some loans
Kashaya phrasal stress

- two words grouped as one stress
  - optional but common
    - (ma qáʔ) (tʃ’aṭem) ‘when you cry’
    - <ʔo>(ho dúh)(samu:)tʃi ‘tend the fire!’
    - <ʔah>(qʰa bá)(tʰe:)=li ‘with lots of water’

- most often yields initial stress in second word
  - influence of initial stress in other languages?

- more complex pattern with long vowels
  - accent shifts from CV: to following foot
  - doesn’t change foot structure; will set aside
Kashaya degenerate feet

• **final stress on disyllabic words**
  
  `<ʔah>(qʰá)`  
  ‘water’

  `<qa>(né)`  
  ‘bite!’

• **phrasal grouping avoids this**
  
  `<bih>(ʃé)`  
  ‘deer’

  `<bih>(ʃe bó)(ʔotaʔ)(tʰuʔ)`  
  ‘don’t hunt deer!’

• **degenerate foot can be unaccented**
  
  `<bih>(ʃe) <bo>(ʔotáʔ)(tʰuʔ)`  
  ‘don’t hunt deer!’

• **strategies to minimize role of such feet**
  – even though they are often created
## Summary of stress patterns

<table>
<thead>
<tr>
<th>Stem</th>
<th>Disyllabic</th>
<th>Prefixed</th>
<th>Monosyllabic</th>
</tr>
</thead>
<tbody>
<tr>
<td>PP</td>
<td>{σó}</td>
<td>σ{ό}</td>
<td>{ό}σ</td>
</tr>
<tr>
<td>E</td>
<td>{σό} ( ~ {όσ} )</td>
<td>σ{ό}</td>
<td>{ό}σ</td>
</tr>
<tr>
<td>N</td>
<td>{σό} ( ~ {όσ} )</td>
<td>σ{ό}</td>
<td>{ό}σ</td>
</tr>
<tr>
<td>C</td>
<td>{σό} , {Cό}</td>
<td>σ{ό} , C{ό}</td>
<td>{ό}σ</td>
</tr>
<tr>
<td>SE</td>
<td>{Cό}</td>
<td>C{ό}</td>
<td>{ό}σ</td>
</tr>
<tr>
<td>NE</td>
<td>{σό} ~ {όσ} ?</td>
<td>σ{ό} ?</td>
<td>{ό}σ ?</td>
</tr>
<tr>
<td>S</td>
<td>{σό}σ , {όσ}</td>
<td>σ{ό}σ , σ{ό}σ</td>
<td>{σ}όσ , {ό}σ</td>
</tr>
<tr>
<td>K</td>
<td>{σό}σ , {σό}σ</td>
<td>σ{ό}σ , σ{ό}σ</td>
<td>{ό}σ , {ό}σ</td>
</tr>
</tbody>
</table>
Diachronic tendencies

• shift from 2nd to 1st syllable
  – scattered examples in E, N, C
  – common in NE

• deletion to yield initial stress
  – with laryngeal onsets in E, N, C, some NE
  – vowel after nonlaryngeal in SE, some in C

• major changes in two languages
  – penultimate in S
  – iambic in K

• does language contact explain some of it?
Languages near Pomoan

- Athabaskan
  - Kato
- Yuki-Wappo
  - Coast Yuki, Yuki, and Huchnom
  - Wappo
- Wintun
  - Nomlaki (N. branch)
  - Patwin (S. branch)
- Miwok-Costanoan
  - Lake Miwok
  - Coast Miwok
Stress in Kato (or Wailaki)

- no description of stress in Kato
  - not even marked
- data for closely related Wailaki
  - 1st syllable of root
    - also of word, for basic nouns
  - can be preceded by many prefixes
    - typical Athabaskan verb structure
Yuki-Wappo languages

- **Yukian**
  - several closely related languages
  - stress usually on first syllable of the root
    - excludes (rare) prefixes
  - some disyllabic roots have stress on second syllable
  - limited pitch accent
- **Wappo**
  - stress on first syllable of the root
    - excludes prefixes, more common than in Yukian
Wintun languages

- **Nomlaki**
  - no stress description
- **Wintu**
  - just north of Nomlaki, and grouped with it
    - so use as stand-in
  - two-syllable window
  - stress on second syllable if heavy, otherwise first
- **Patwin**
  - again, stress on first or second syllable
  - seems to correlate fairly well with syllable weight
Interim summary

• Kato, Wailaki not especially relevant
  – first syllable of root is like other languages
  – long string of prefixes is only in Athabaskan
• Yuki-Wappo stresses first root syllable
  – may especially have affected NE
  – Yuki might also relate to pitch accent in N
• Wintun has first/second syllable stress
  – with important role for syllable weight
  – potentially germane to NE
• of course, Pomoan may have influenced them
  – such as second-syllable stresses in Yukian
Western Miwok

- two nearby varieties
  - Lake Miwok adjacent to E and SE
  - Coast Miwok adjacent to K and S

- Bodega Miwok
  - northwest dialect of Coast Miwok
  - immediately adjacent to K and S
  - discussion based on forms in dictionary
    - (Callaghan 1970)
Miwok stress

• reported Lake Miwok stress (Callaghan 1971)
  – stress on leftmost CVV
  – otherwise on leftmost CVC
  – otherwise on initial syllable

• data suggests that stress rarely moves past the second syllable
  – consistent with Proto-Pomo
  – and in E and NE nearby

• Bodega Miwok is similar to Lake Miwok, except that
  – “stress may shift to the penult”

• important since S has penultimate stress
  – but what exactly does that description mean?
Bodega Miwok stress

• disyllables have initial stress unless final long vowel
  kóle  ‘grass’
  kénum ‘every’
  hú:ma ‘fish eggs’
  ?ellé: ‘fish’

• longer words mostly penultimate
  – rightward shift under suffixation
  támal ‘west, coast’ tamál-to ‘on the coast’
  kó:ja ‘girl’ ko:já-ko ‘girls’
  jólum ‘eat’ jolúm-ne ‘feed’
  táwuh ‘think, guess’ tawúh-mi ‘guess!’
  tólpá ‘answer’ tolpá-mmi ‘answer!’
  tollé-pa ‘let go of’ tollepá-mmi ‘let go of it!’
Bodega Miwok extrametricality

• certain suffixes appear to be ignored for stress
  – stress is antepenultimate unless the penult is heavy

  lú:ṭa  ‘poke (a fire)’
  lu:ṭá-ja  ‘a poker’
  lú:ṭa-<ṭi>  ‘poke’ (PERFECTIVE)
  júlu  ‘be angry’
  jullú-m-<ṭi>  ‘quarrel’ (RECIPE, PERF)
  kénne  ‘one’
  kenné-tto  ‘together’ (ALLATIVE)
  kénne-<wa>  ‘one place’ (LOCATIVE)
  kenne-wá-tto  ‘in one place’

• residue of unexplained exceptions
  – antepenultimate without these suffixes
  – penultimate on light syllable before these suffixes
Miwok and Southern Pomo

• random sample shows 89% penultimate stress
  – partly due to large number of disyllables
  – final long vowels are quite uncommon

• overwhelmingly one pattern in Miwok data
  – especially if take extrametricality into account
  – those suffixes excluded from penultimate domain

• appears to be the basis of S Pomo innovation
  – adjacency to this pattern is surely not a coincidence
  – past period of significant bilingualism?

• perhaps also related to ambiguities in S words
  – trisyllables with stress on second syllable
  – matches both inherited and penultimate analysis
Southern Pomo reanalysis

• texts in S show many trisyllabic words
  – ambiguous between “second” and “penultimate”
  $k^h\text{a:lé?wan kú?mu di:láts’aw, }k^h\text{a?béjej}$
  ‘Rock broke all the trees by falling on them’

• reanalysis as penultimate system
  – suppose native speakers of Miwok marrying into Pomo communities
  – children exposed to both languages
  – or to Miwok-accented Pomo
Southern Pomo reanalysis

• stress in phrases possibly related to reanalysis
  *<beh>(šé) original pattern
  <beh>(šé) <dah>(lá:li) independent footing on 2nd
  ~ beh(šé dah)(lá:li) or iterative from penult
  (béhše) new independent pattern

• period of variation behšé ~ béhšē may even have
  led to phrase-level pattern
  – speakers conceivably preferred the variant that led to better sentence rhythm
  – form in isolation then stabilized as penultimate
Kashaya reanalysis

• doesn’t abandon the old system like S does
  – but further develops it

• repeats what must have occurred in Proto-Pomo
  – assume Pre-Proto-Pomo was first-in-root: σ{ό}, {όσ}
  – later develops second-in-word for longer roots: {σό}

• likely a crucial role again for prefix structure
  – overwhelmingly common in verbs

• depends on ambiguous pattern in σ{ό}
  – 2nd in word, or 1st in root
Kashaya alignment

• new K system combines two patterns
  – left edge of root as reference point
  – assign stress to 2nd syllable
  – if prefixed, then this yields the 3rd syllable

• possible influence of Central Pomo
  – loss of many initial syllables: \*mi{hʃé} > m{ʃé}
  – more stresses are initial in both word and root

• 1st or 2nd syllable counting from the root
  – depending on weight: mi{hʃé}C \sim mi{hʃe}\dot{ο}
  – variation in 1st/2nd \iff differences in weight
Kashaya syllable weight

• introduction of true iambs
  – stress varies between 1st and 2nd, by weight
  – a crucial development

• no other nearby language has this
  – weight is relevant in Wintun and Miwok
  – but in quite different ways than in K

• internal development?
  – perhaps in context of ambiguity in analysis
    • 1st in root, 2nd in word > 2nd in root if 1st is light

• period of variation in stress location
  – children making sense of this via weight
Summary: Extrametricality

• Proto-Pomo had left extrametricality
  – this itself was probably an innovation
  – skipping of prefix > skipping of any first syllable

• some languages abandon this element
  – SE deletes the extrametrical syllable
  – S completely replaces the system
  – NE might have variable extrametricality

• majority of the languages maintain it
  – despite how marked it is
  – even more marked to have 3rd syllable stress in K
Summary: Degenerate feet

- Proto-Pomo had frequent degenerate feet
  - in disyllables with final CV
  - made necessary by extrametricality
- most languages maintain this element
  - SE develops even more since it loses vowel length
  - create more words shaped CV by aphesis
  - only S clearly avoids it, by footing both syllables
  - yet that required contact with Miwok, it seems
- two marked elements
  - both survive widely
  - support each other formally
Implications

• degenerate feet are clearly marked
  – if markedness has any effect, this should be penalized
  – yet they persist across time in nearly all the languages
  – just minor remedies in synchronic footing (SE, K)
• left extrametricality is quite rare
  – yet it survives in most of the languages
  – where it diminishes, could be due to contact
• special role for patterns in shorter, simpler words?
  – such as Southern béhʃe ~ behʃé
  – learned earlier
  – less morphological confounding
• language transmission here depends on what the child hears, not markedness biases
  – whether inherited or by contact
  – if these biases exist, they must be quite weak
Thank You!