Underlying glides vs. vowels: typology and case studies

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Organization of the talk

- What is an underlying glide
- Debate over the existence of underlying glides
- Why glides are problematic/confusing
- Benefits of the typology
- Distribution of vocoids in the worlds' languages
- How the typology was created
- An example of each type of language

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What this talk will not cover:

- Features/representation of underlying glides
- All of the arguments for the existence of underlying glides
- Methodology for deciding whether a particular language has underlying glides

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What is an underlying glide?

- A segment that contrasts with an underlying vowel e.g. / i / and / j /.
- Some properties that can help determine whether a segment is an underlying glide:
  - Epenthesis (in a cluster that includes a glide)
  - Transparency in Vowel Harmony
  - Participation in Consonant Harmony
  - Reverse sonority clusters
  - Expected syllabification
  - Sonorant series (e.g. voiced, voiceless, glottalized)

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Existence of underlying glides?

- Previous insight: most vocoids are predictable on the surface.
- A typical phenomenon is for i~j predictably, so often assumed that this is the only source of [j], namely / i /.

Deny underlying glides	Allow underlying glides
Kaye & Lowenstamm 1984 Levin 1985 Rosenthall 1994 (Steriade 1984)	Clements & Keyser 1983 Deligiorgis 1988; 1993 Waksler 1990 (Hayes 1989) (Hume 1995)

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Why are glides confusing?

- Glides are derived from two different sources.
- There is phonetic identity between:
  - Glides that are derived from underlying glides and
  - Glides that are derived from underlying vowels
- Glides variably pattern with vowels or with consonants.
- If glides appear in certain positions, they are likely to simply be included in the consonant inventory (even if they are not underlying).
  - e.g. UPSID includes j and w in many of the inventories, but there is not necessarily evidence for their existence.

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Benefits of this typology

- Shows the possible underlying vocoid systems and how they can be mapped to surface forms.
- Clarifies why the issue of glides and vowels has been so difficult by providing the range of distributions and mappings of vocoids.
- Knowing the possible systems of vocoids is relevant no matter what theoretical framework one adheres to.

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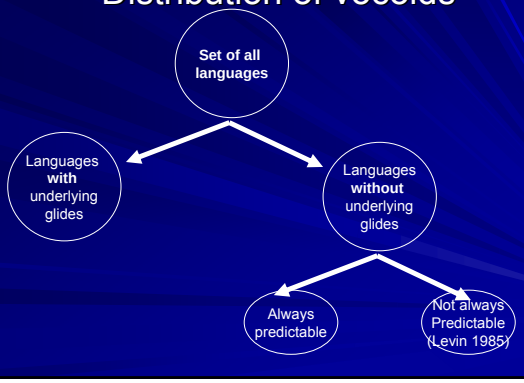
Distribution of vocoids



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Typology: starting assumptions

- ∃ two possible underlying segments:
  - Underlying glides: / j /
  - Underlying vowels: / i /
- ∃ two possible surface segments:
  - Surface glides: [j]
  - Surface vowels: [i]
- ∃ three possible mappings
  - "Itself"
  - "Both"
  - "Zero"

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Typology: the mappings

- "Itself" / i / OR / j / → [i] OR [j]
- "Both" / i / OR / j / → [i] [j] OR [i] [j]
- "Zero" / i / OR / j / → ∅ OR ∅ (i.e. these segments are not underlying)

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Whole typology

Type I	Type II	Type III	Type IV
/ i / → [i]	/ j / → [j]	/ i / → [i] [j]	/ j / → [i] [j]
i: itself j: zero	i: zero j: itself	i: both j: zero	i: zero j: both
Type V	**Type VI**	**Type VII**	**Type VIII**
/ i / → [i] / j / → [j]	/ i / → [i] / j / → [j]	/ i / → [i] / j / → [j]	/ i / → [i] / j / → [j]
i: itself j: itself	i: both j: itself	i: itself j: both	i: both j: both

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Case studies

- Type I: Tukang Besi
- Type II: Deg Xinag
- Type III: Latin
- Type IV: *Missing*?
- Type V: Yawelmani
- Type VI: Karuk
- Type VII: *Missing*?
- Type VIII: IT Berber

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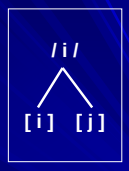
Type I: Tukang Besi

- Donohue 1999; p.c.
- Rare
- Vowel Inventory: / i ɛ a o ɯ /
  - /iaku/ [i.á.ku] ‘I, me’
  - /baiara/ [ba.i.á.ra] ‘pay’
  - /mai- -ako/ [ma.i.a.ko] ‘come gen. applic.’

Type II: Deg Xinag

- Taff 1996
- Sonorant Inventory:
  m n j ŋ
  m̥ n̥ j̥ ŋ̊
  m’ n’ j’ ŋ’
- Vowel Inventory: / e a ə o ʊ /
- Underlying glides in:
  - /x ʊj/ ‘roots’
  - [q'ʊjəɬčeθ] 'he's carrying it (clothlike) around' (Hargus p.c.)

Type III: Latin

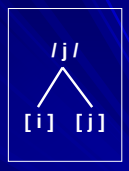


- Steriade 1984
- Surface glides in
  - (a) # __ V
    - /iecur/ [je.kur] ‘liver’
    - /uenio/ [we.ni.o:] ‘I come’
  - (b) V __ V
    - /ouis/ [o.wis] ‘sheep’
    - /auus/ [a.wus] ‘grandfather’
    - /iuuenis/ [ju.we.nis] ‘young’

Type III: Latin (cont.)

- Vowels
  - C__
    - /mulier/ [mu.li.er] ‘woman’
    - /dies/ [di.e:s] ‘day’
    - /mutuus/ [mu.tu.us] ‘mutual’
- Other languages with predictable alternations: Wantoat (Davis 1969), Karuk (palatal glide) (Levi 2004), several other languages in Rosenthall 1994

Type IV: Missing?



- Will come back to this

Type V: Yawelmani

- Newman 1944, Archangeli 1984
- V-V resolution at morpheme boundaries:
  - ʔ insertion
    - /sasa:-in/ [sasa:-ʔ-in] ‘eye-possess’
    - /pana:-itˢ/ [pana:-ʔ-itˢ] ‘arrive-agentive’
  - V deletion
    - /paxju:-ila:-hin/ [paxj_-ula:-hin/ ‘caused s.th. to scatter’
  - Never gliding

Type V: Yawelmani (cont.)

- Glide forces epenthesis:
  - /ʔutj-t/ [ʔutj-u-t] 'fall-aorist'
    - *[ʔuti-t], *[ʔutu-t]
  - /logw-k'a/ [logiw-k'a] 'pulverize-imp.'
    - *[logu-k'a]
- Other languages of this type: Cree, Turkish, Sundanese, Tahltan (Levi 2004)

Type VI: Karuk

- Bright 1957
- Underlying vowel:
  - Predictable Distribution:
    - Surfaces as a glide:
      /imuira/ [imwira] 'fishery' VCGVCV (both high)
      /taiau/ [tajaw] 'to choose'
    - Surfaces as a vowel
      [tur] 'to carry things'
      [sipa:n] 'grinding slab'

Type VI: Karuk (cont.)

- Underlying vowel:
  - Across Morpheme Boundary:
    - Deletion before V-initial suffix:
      /ikriu-at/ [ikr e: t] 'lived'
      (c.f. [ikriw] 'to sit')
    - Surfaces before a C-initial suffix:
      /ikriu-tʃak] [ikriw-tʃak] 'to sit in the way'

Type VI: Karuk cont.

- Underlying glide:
  - Different distribution:
    - /uiriwsaw/ [wiriwʃaw] 'to bequeath to'
  - Across Morpheme Boundary:
    - No Deletion before V-initial suffixes:
      /ʔiw-apuh/ [ʔiw-apuh] 'dead'
    - Surfaces as Nasal before C-initial suffixes:
      /ʔiw-kara/ [ʔi:m-kara] 'to drown'

Type VII: Missing?

- Will come back later

Type VIII: IT Berber

- Elmedlaoui (1985), Dell & Elmedlaoui (various)
- Any segment/consonant can surface in the syllable nucleus.
- Underlying vowel:
  - Alternations:
    /i-kti/ [i-kti] 'he remembered' (ME85)
    /i-ura/ [j-ura] 'he wrote' (ME85)
  - V V surfaces as VG
    /i-sui/ [i-suj] 'he passed'
    /t-ikiu-t/ [t-ikiw-t] 'kind of plant'

Type VIII: IT Berber (cont.)

- Underlying glide (alternations):
  - Different syllable behavior:
    - /i-swi/ [i-swi] 'excrement'
    - /!a-kjud/ [!a-kjud] 'braid (hair)'
    - c.f. /i-sui/ [i-suj] 'he passed'
    - c.f. /t-ikiu-t/ [t-ikiw-t] 'kind of plant'
  - Can also be syllabified in nucleus:
    - [nwa] 'be cooked' (perfective)
    - [nwi] (negative)
    - [nu] (aorist) /nw/

Missing Type IV

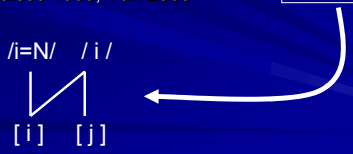
- Could be missing due to its confus ability with Type III (UR vowel)
- Need some featural process to disambiguate.
- Possibly not found because of
  - Rarity of lgs which lack high vowels (from Maddieson 1984)
    - Lgs which lack a high front unrounded vowel: 3/317 = 1%
    - Lgs which lack a high back rounded vowel: 21/317 = 6.6%
  - Rarity of underlying glides (?)

Missing Type VII

- Could be missing due to potential alternative analysis
- Consider the situation:

Missing Type VII (cont.)

- Can be analyzed as having a Lexically Marked Nuclear High Vowel
- Used in Levin 1985, Guerssel 1986, Harris & Kaisse 1999, Yun 2003



Conclusion

- There are several realizations (mappings) of underlying to surface vocoids.
- There are several combinations of underlying vocoids.
  - The typology shows why the issue of underlying and surface Vs and Gs is complex by providing an outline of the possibilities.

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