GLIDE INSERTION TO BREAK A HIATUS IN PORTUGUESE:
the role of prosodic, geographic and sociolinguistic factors

Interactive Atlas of the Prosody of Portuguese
(PTDC/CLE-LIN/119787/2010)
Background: Variation in European Portuguese

- Segmental processes across EP varieties
- Prosodic conditions on segmental processes (Standard)
- Prosodic variation
- Glide insertion to break a hiatus

Method

- The InAPoP project
  - Corpora
  - Regions
  - Speakers
  - Data collection: reading task, map task and interview
- Data analysis

Results and Discussion

Conclusions
Variation in European Portuguese

Segmental processes across EP varieties

Northern varieties
- maintains a four sibilant system
- non phonological distinction of /b/ vs. /v/
- Glide insertion to break a hiatus a-[jj]-água
- ...

Central-Southern varieties
- monophthongization of [ej] to [e]
- vocalic epenthesis: café[i], pé[i]
- ...

(Vasconcelos, 1901; Cintra, 1971; Segura & Saramago, 2001; Florêncio, 2001; Segura, 2013)

(Northern and Southern varieties; segmental issues)
Variation in European Portuguese

- Segmental processes across EP varieties
- Prosodic conditions on segmental processes (Standard)

✔ IP domain

- Fricative Voicing (Frota, 2000, 2014)
  
  \[ z \rightarrow \text{within and across PW and PhP} \]
  
  \[ j \rightarrow \text{across IP} \]

- Haplologia (Frota, 1995, 2000)
  
  \[ \text{cam[pu]lu\text{\^i}do} \rightarrow \text{IP domain} \]

- High V semivocalization or deletion (Frota, 2000)
  
  \[ (\ldots[w])_{PW} (\ldots)_{IP} \rightarrow \text{IP domain} \]

- Crasis (Frota, 1995, 2000)
  
  \[ /a a/ \rightarrow \text{IP domain} \]

- Semivocalization (Vigário, 2003, 2010)
  
  \[ \text{beb\_água} \quad ??[j]/0 \rightarrow \text{across PW} \]
  
  \[ \text{d[j]água vs. d_água} \quad [j]/0 \rightarrow \text{Within PW (inside IP)} \]

✔ PhP is not a domain for segmental processes → Standard variety
Variation in European Portuguese:

- Segmental processes across EP varieties;
- Prosodic conditions on segmental processes (Standard)

   ✓ Vowel Deletion / Semivocalization
   (Frota, 2000, 2014; Vigário, 2003, 2010)
   - Vowel deletion may be blocked in different prominence contexts
     - PhP prominence
       
   ✓ PWG prominence
     
   ✓ The type of words involved (CL or PW):
     - de amigos (j/0) vs come amoras (*j/0);

   ✓ Highly frequent words or word-combination may trigger specific phonology:
     - com a > ca; espera > pera; nunca mais > camais
Variation in European Portuguese:

- Segmental processes across EP varieties;
- Prosodic conditions on segmental processes (Standard);
- Prosodic variation

- Phrasing (Frota & Vigário, 2007; Cruz & Frota, 2013)
  - (S)(VO) → Bra, ALE
  - (SVO) → SEP, ALG

- Fricative Voicing (Frota, 2000; Cruz, 2013)
  - [ʃ] → IP domain  SEP, ALE and ALG ([z]/[Z])

- Final vowel insertion (Cruz, 2013)
  - [@] [i] → IP domain
Variation in European Portuguese

- Segmental processes across EP varieties
- Prosodic conditions on segmental processes (Standard)
- Prosodic variation
- Glide insertion to break a hiatus

✓ Few references to the phenomena
✓ Which phonological conditions:
  - Only two adjacency a (Lopo, 1895)?
  - The second must be stressed?
  - Across words?
✓ Recent contribution (Segura, 2013):
  - V2 must be stressed
✓ Prosodic conditions:
  - Across words, but what is the prosodic domain?
  - Is higher-level prominence also relevant? (i.e. does it block or potentiate glide insertion?)
  - Does the type of word V1 belongs to matter? (i.e. is glide insertion restricted to V in clitic-final position?)
✓ Factors involved:
  - Geographic and sociolinguistic factors?
Method:
- The InAPoP project

- Corpora:
  - Reading Task
    (i) prosodic context
      [domain of V1 (is not part of CL) V2]
    (ii) prominence level (of V2)
    (iii) phonological status of V1
  - Map Task
  - Interview

- Regions:
  - 4 regions (Urban and Rural)
    Arcos de Valdevez (U) – ArV
    Castro Laboreiro ® – CtL
    Braga (U) – Bra
    Fiscal (R) – Fis
    Ermesinde (U) – Erm
    Gião (R) – Gia
    Nisa (R) - Nis

- Speakers
  3 females speakers
  2 age groups (20-45; 60+)

- Data collection
  In loco
Method:

- Targets
  - Corpora: reading task

24 targets X 2 randomizations X 6 speakers X 7 regions = 2016

V1 V2 inside of PW
Nunca tinha ouvido falar da região de Simardí Cura (…)

V1 V2 inside of PWG
Sabes se há algum campeonato onde se joguem os trinta avos de final?

V1 V2 across PhP
Um amigo meu importava aves raras do Brasil.

V1 V2 across IP
Quanto à Maria, aulas às oito da manhã nunca lhe agradaram.

V2 PW prominence
O avô Joaquim andou (…), como a cidade de Faatú e os Jardins de Cimabué.

V2 PWG prominence

V2 PhP prominence
O Pedro falou da Ana a uma antiga amiga.

V1 belongs to a CL
O jornalista perguntou aCL Ana Moura pelo seu cachimbo novo.

V1 belongs to a PW
Um amigo meu importavaPW aves raras do Brasil.
Method:

- Targets:
  - Corpora:
  - Map Task:
    - Map task: 91 targets
  - Interview:
    - Interview: 38 targets
Method:

Data analysis:
- Perceptual analysis (3 researchers);
- Spectrographic analysis in Praat;
- 4 tiers:
  - Orthographic annotation;
  - Phonetic annotation;
  - P_ToBI annotation (Frota, 2014);
  - Segmental annotation.

Tiers with orthographic, phonetic, prosodic and segmental transcription of the sentence ‘O Quim andava com ideias de trabalhar na AEG.’ by SD speaker from CtL.
Results:

- **Prosodic context: Reading Task**

- In several locations glide insertion occurs inside PW, not only across PW
- PWG domain: ArV, CtL, Fis ad Gia
- PhP domain: (just) ArV and CtL
- IP domain: blocks insertion
- ArV, Fis, Erm and Gia → Low domains
- ArV and CtL → High domains

Glide insertion as a function of prosodic context and region. V1 belongs to PW
Results:

- **Prosodic context: (semi-)spontaneous**
  - In the (semi-)spontaneous data, potential contexts for only occurred in the conditions across PWG and across PhP.
  - Insertion occurs across PWG in several areas more frequently than in the reading task.
  - Gia shows insertion across PhP, unlike in reading task.

Glide insertion as a function of prosodic context and region. V1 belongs to PW.
Results:

- **Prominence of V2: Reading task**
  - In some regions V2 prominence seems to favour insertion (ArV and CtL), while in others it does not (Fis and Gia)
  - In Bra there is no insertion when V1 is part of PW (so any possible effects of V2 prominence cannot emerge)
  - In Nis there is insertion when V1 belongs to PW only in (semi-)spontaneous tasks (so, again, any possible effects of V2 prominence cannot emerge)
Results:

Prominence of V2: Reading task and (semi-)spontaneous

- Under the same conditions (V2_head) (semi-)spontaneous speech shows significantly more insertion than read speech

Glide insertion as a function of prominence of V2 and region. V1 belongs to PW
Results:

- **Prosodic context of V1 and prominence of V2: reading task**
  - In ArV and CtL V2 being the head of its domain favours insertion (both at PWG and PhP-level)
  - In Fis, Erm and Gia the same tendency is only observed at the PhP-level

Glide insertion as a function of prosodic context of V1 and the prominence of V2, per region. V1 belongs to PW
Results:

- Prosodic context of V1 and prominence of V2: (semi-)spontaneous
  - PhP domain: all regions (to the exception of Bra)
  - In Nis (the region with the lowest frequency of insertion), it only occurs when V2 is the head of PhP
  - When V2 is the head of constituent, highest levels of prominence in V2 always seem to enhance the appearance of glide

Glide insertion as a function of prominence of V2 and region. V1 belongs to PW
Results:

V1 status (V1_CL vs V1_PW): Reading task

- Insertion mainly occurs when V1 is a CL
- Bra and Nis: when V1 is a PW, the phenomenon does not occur
- Only rural regions present insertion when V1 is a PW (except ArV)
Results:

V1 status (V1_CL vs V1_PW): (semi-)spontaneous

- Pattern similar to that found in the reading task
- Erm and Gia: higher frequency of insertion when V1 is PW, in contrast with the other regions;
- The extreme northern varieties show the highest frequency of insertion when V1 is a CL (close to 100%).

Glide insertion when V1 belongs to CL or PW
Results:

- V1 status (V1_CL vs V1_PW):
  - 60+ insert more than 20-45 (all regions); except CtL!
  - We should note that there is a gap in the data from CtL in the reading task, as only one speaker in the 60+ group was a fluent reader.

Glide insertion when V1 belongs to CL or PW
Conclusions:

- Not only the quality of vowels and the presence of stress are involved

- IP domain blocks the occurrence of insertion
  ("Quanto à Maria,[@] aulas às oito da manhã, nunca lhe agradaram")

- Insertion may occur between words (CL_PW and PW_PW), as previously described, but it may also apply within PW (e.g. Faato>Fa[j]ato)

- The occurrence of the phenomenon is constrained by different prosodic conditions (domain and prominence), as well as by speech modality (different tasks) and sociolinguistic factors (e.g., age)

- PWG and PhP (in some regions): prosodic domains that mostly favour glide insertion to break a hiatus

- When V1 is a CL, there is insertion in all regions
Conclusions:

- Data show that the phonological status of V1 is also important for the frequency of insertion (and not only the stressed nature of V2)

- Modality is relevant: in some regions, the phenomenon does not occur in the reading task but it does in (semi-)spontaneous speech → this shows the relevance of the method followed in this study

- There is more insertion in older speakers across all regions;

- However, it is not necessarily a loss in the occurrence of the phenomena;

- Further data must be analyzed in order to better discuss the mechanisms involved in phonological variation and change.
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