

Allophonic vs. phonemic labio-palatal glides: A cross-linguistic EPG study on Italian and French

Pier Marco Bertinetto (Scuola Normale Superiore), **Silvia Calamai** (Università degli Studi di Siena), **Charles Barone** (Università di Pisa), **Chiara Bertini** (Scuola Normale Superiore), **Irene Ricci** (Scuola Normale Superiore), **Reza Falahati**

piermarco.bertinetto@sns.it

Glides are peculiar segments in phonological inventories across languages, since they share some of the properties of both vowels and consonants. In this study, we investigated the articulatory properties of the labio-palatal glide [ɥ] across two languages: Italian and French.

This glide has a phonemic status in French, where it is phonetically related to the phoneme /y/ (compare *n[ɥ]it* with *l[y]ne*). In Italian, by contrast, it only exists as an allophone of /w/, as created by the transition to a following palatal glide (e.g., *contin[ɥ]iamo*). In this study, we compared the labio-palatal glide with the other glides (palatal /j/ and labio-velar /w/) and with the vowels most related to it (/i u/). It must be underlined that very little is known from previous studies concerning the articulation of [ɥ] (but see Calamai & Bertinetto 2006 for a first inspection).

The articulatory and acoustic data were collected from two native speakers of the mentioned languages (Italian and French), who read five times a list of words and sentences. The labio-palatal glide [ɥ] was produced in different contexts, taking into account: the preceding consonants, the following vowels, the context of production (isolated word vs. sentence), stressed vs. unstressed position, as well as different positions in the word. Needless to say, French offers many more materials than Italian, where this merely allophonic sound has a very limited distribution.

The analysis confirms that [ɥ] has very distinct articulatory properties, as contrasted with both /j/ and /w/, but also with /i/ and /u/. Figures 1-2 show typical samples of the EPG contact in the middle portion of the [w], [ɥ] and [j] glides by the two Italian speakers. As one can see, the palatal contact of [ɥ] makes it much more similar to [j] than to [w]:

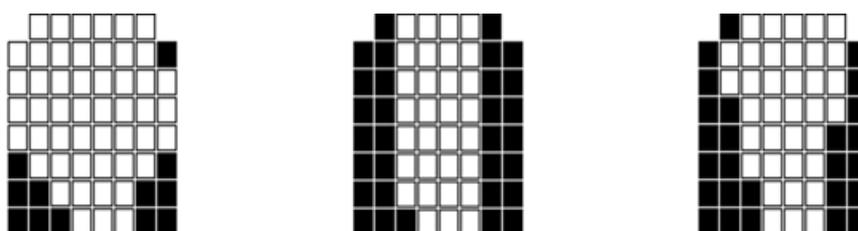


Fig.1 : EPG contacts for *contin[w]ate*, *contin[ɥ]amo*, *contin[j]ano* (subject CC)

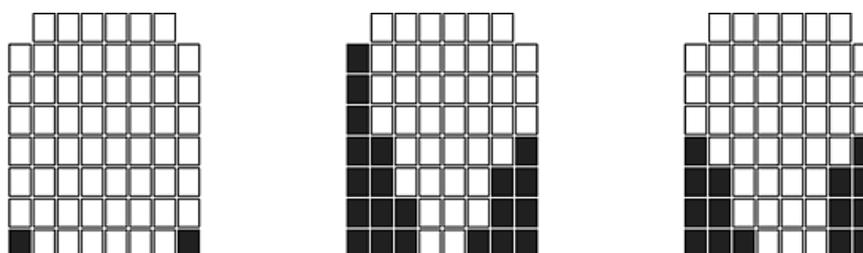
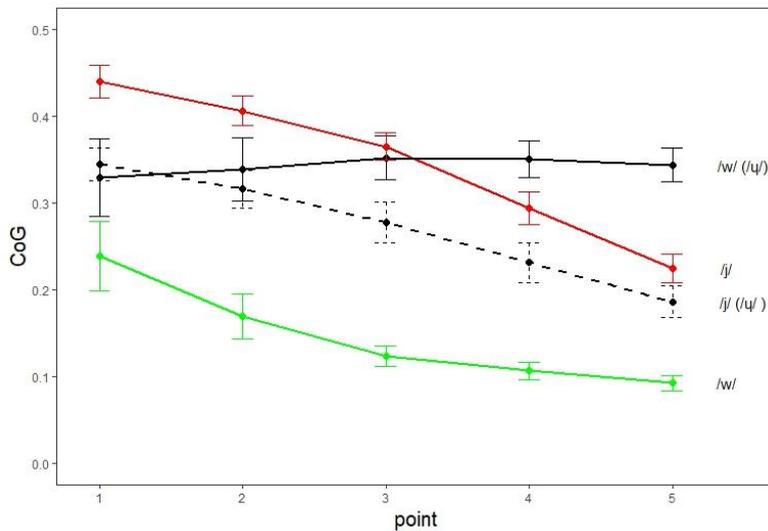


Fig.2 : EPG contacts for *continue*, *continuiamo*, *continiano* (subject CB)

The dynamic evolution of the articulatory gesture strengthens this conclusion, as shown in figure 3, where each segment is measured (according to the EPG “Center of Gravity” parameter) in five points of the glide duration: initial, 1/4, 1/2, 3/4, final. The red and the green lines refer to [j] and [w], respectively; the black continuous and the black segmented lines correspond, instead, to

the [ɥ] portion and the [j] portion of a [ɥj] glide sequence (where the final point of the former obviously coincides with the initial point of the latter). As the figure shows, the [ɥ] portion of the [ɥj] sequence is in the Center of Gravity region of the [j] glide, while the [j] portion of the same sequence is half way between [j] and [w]:



The results on the French data by and large confirm this tendency. The presentation will detail the similarities and differences of isolated words as contrasted with words in sentences. Great care will be devoted to the different status (phonemic vs. allophonic) of this sound in the two languages.

References

Calamai, Silvia & Bertinetto, Pier Marco 2006. Per uno studio articolatorio dei *glides* palatale, labio-velare e labio-palatale dell'italiano. In Giordani, Veronica; Bruseghini, Valentina & Cosi, Piero (curr.), *Scienze vocali e del linguaggio. Metodologie di valutazione e risorse linguistiche*, 3° Convegno Nazionale dell'Associazione Italiana di Scienze della Voce, Trento 2006.