French Glides after C-Liquid: the effect of contrast distinctiveness

Introduction: French glide-vowel alternations have earlier been analyzed as consequences of syllabic well-formedness ([2], [4], [7], [9]). We show instead that the effects attributed to syllabic conditions are more likely to stem from perceptual distinctiveness factors.

In French, prevocalic /u/, /i/ may be realized as glides (/w/, /ʁ/; 1a, 1b); this process is partly blocked after obstruent-liquid clusters (OL), where /u/ may become [w], but /i/ must remain [i] (1c, 1d).

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\begin{align*}
(1) \quad & \text{a. } [j]_L V: [lje] \text{ `to tie’; } [kje] \text{ `laugh2pl’; } [pa\lje] \text{ `spoke2pl’} \\
& \text{b. } [w]_L V: [lwa] \text{ `to rent’; } [\lwe] \text{ `to throw (oneself)’;} \\
& \text{c. } [w]/OL_V: [plwa] \text{ `bends’; } [p\lwa] \text{ `prey’} \\
& \text{d. } *[j]/OL_V: [pl\lje]\, *[pl\lje] \text{ `flexible’; } [p\l\lje]\,*[pl\l\lje] \text{ `praying’}
\end{align*}
\]

A syllabic account originating with [7] derives this pattern from constraints on onset and nucleus structure: [wV] sequences are variably parsed as a [wV]-diphthong or as onset-V. [j]V sequences are said to allow only the second, Onset-V option. The ban on OLj is attributed to the fact that complex onsets are limited to 2 consonants. This account predicts that intervocalic clusters, including OL, should allow a following [j] if the cluster initial consonant can be parsed as the coda of the preceding syllable: e.g., [ad.la] should be possible, since [ad.la] is, [5].

Experiment 1, Methods and Results: 12 French speakers first carried out a pause-break task [3] on forms containing OL sequences. This established each subject’s parse for each cluster type. Subjects then formed novel words suffixed by –ien, –ier. These suffixes alternate, e.g. as [je]/[ie], depending on context [2]. Bases ended in OL onsets (éer.a.ble, éerab.l-ier), heterosyllabic OL (yoa.l.ier, yoda.l-ier), or other clusters (e.g., [sm]). Subjects invariably produced suffixal <i> as [i] after all OL clusters, regardless of OL parse (e.g., [era.bli.e], [jod.li.e]), and as [j] after other clusters (e.g. [e.ka.s mjê]).

The results show that all OL clusters block [j], rather than only OL-onsets. The syllabic analysis is unable to derive this generalization.

Experiment 2, Methods and Results: The alternative we explore is that the factor blocking [j] after OL involves perceptual distinctiveness: we hypothesize that OLj sequences (e.g., [ablja]) would be confusable with corresponding sequences without [l] (e.g., [abja]), possibly due to the extensive palatalization of [l] in this context. To test this, we have run an AX discrimination experiment comparing a liquid-zero contrast in four environments (ab_ia, ab_ja, ab_ua, ab_wa) with 45 native speakers of American English. Results show that [j] decreases the perceptibility of the liquid-zero contrast, more than [i, u, w]. (β=1.09, \(z=2.33, p<0.05\); Figure left).

Discussion and Future Work The [bl]-results in Exp.2 provide initial evidence for a perceptual account of the ban on OLj: [j] is prohibited wherever it makes the presence of a following liquid less perceptible. We are in the process of extending this investigation to the entire French paradigm. In pilot data, the [bl]-results carry over to [dl]-sequences, but [br], [dr] clusters behave differently: it is possible that the difficulty with [j] after Or strings is articulatory, as argued in [6]. We will discuss the implications of this data for the broader choice between syllable-based and distinctiveness-based analyses of phonotactics.
References


[9] Tranel, B. 1987 The sounds of French, CUP