C'(es)t un effort : vowel reduction of French /ɛ/ in a formal speaking task

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Traditionally, the only vowel in French that can be fully reduced is the schwa. However, the full reduction or deletion of other vowels to /Ø/ has also been observed: Clapin (1974) and Griolet (1986) describe /ɛ/ > /Ø/ reduction in certain varieties of French in North America (cf. *à cɛtte heure* /a.sɛ.tœʁ/ 'now' against *asteur(e), astheure,* or *a'stheure* /a.stœʁ/); Torreira and Ernestus (2011) demonstrate that /e/ in *c'était* (/se.te/; 'it was') is regularly reduced to [ste] in casual speech in Paris; and Durand, Laks, and Lyche (2002) give the words *déjeuner* (/de.ʒø.ne/ > [deʒ.ne]; 'lunch') and *peut-être* (/pø.tɛtʁ/ >[ptɛtʁ]; 'maybe') as examples of possible /ø/ deletion.

Torreira and Ernestus (2011: 51) suggest that the phenomenon of the reduction of non-schwa vowels (i.e., /e/, in their study) "can be elided categorically only in extremely relaxed and casual speech" and that casual speech phenomena "cannot be properly studied in a highly controlled laboratory setting." However, the deletion of /ɔ̃/ in *son* (/sɔ̃/; 'his/her') in liaison position has also been observed in the formal speech context of reading tasks recorded in a laboratory setting (McBride & Griffiths, 2020). In both of these studies, the deleted vowel yields viable, complex onsets (i.e., either [st] or [sn]) that are attested lexically in French.

The present study draws inspiration from the abovementioned work by Torreira and Ernestus (2011) by seeking to a) determine whether deletion of the mid-vowel /ɛ/ can be attested with regularity in a formal speaking task, b) describe some of the phonetic properties of reduced /ɛ/ in *c'est* (/sɛ/; 'it/that is') in liaison position, and c) identify some of the conditioning factors of /ɛ/ reduction in this context.

A modest number of *c'est* tokens (n=7 per speaker) are analyzed in a reading task completed by 19 speakers of Northern Metropolitan French in a laboratory setting. The vowel /ɛ/ appears in both pre-vocalic and preconsonantal *c'est* (cf. examples in (1), below), in both phrase-initial and phrase-medial positions. Duration of [s], [s(ɛ)], [ɛ], and [t], as well as vowel formants for /ɛ/ are extracted using Praat (Boersma & Weenink, 2022).

1) a)   *C'est un…*
         /sɛ.tœ̃/
         'It's a...'
   b)   *C'est pour…*
         /sɛ.puʁ/
         'It's for...'

In response to the first research question, the vowel /ɛ/ is observed to reduce fully (i.e., deletion) in more formal reading-task speech in 25.26% of all *c'est* tokens preceding a vowel-initial word. In these cases, the reduction seems to be categorical rather than gradient, as comparison of the durations of [s] in [s(ɛ)] and [sɛ] in *c'est* tokens suggests that [s] doesn't

undergo compensatory lengthening when /ɛ/ is elided (mean duration of [s]/_(ɛ) = 90ms; mean duration of [s]/_ɛ = 91.3ms; $p > 0.05$).

When full reduction of /ɛ/ does not occur, its mean duration is ~35.6ms. A decrease in duration generally corresponds to an increase in vowel height toward [i,ɪ] through "reduction in gestural magnitude" (Torreira & Ernestus, 2011: 50), which may support the dual-nature of both gradient and categorical reduction that Torreira and Ernestus (2011) postulated for /e/.

The factors that seem to condition categorical reduction the most are position within the phrase and speaker. While 36.8% of speakers did not fully reduce /ɛ/ in any *c'est* token, others did so extensively, including two that even elided the /ɛ/ before the consonant /t/ (i.e., in *c'est tout ce que*...[stuskø]; 'it's all that...'). Speakers who did fully reduce /ɛ/ tokens did so at least twice as frequently in phrase-initial position as in phrase-medial position. Speech rate does not seem to be a strong factor in conditioning the full reduction of /ɛ/.

Although schwa does not seem to be the only vowel in French that can be reduced with some regularity, results from the present study and those of Torreira and Ernestus (2011) suggest that schwa still constitutes a unique phonological class in French phonology. For example, in the data set analyzed here, /ɛ/ is deleted more frequently in phrase-initial position than in phrase-medial position, which results differ from Hansen's (1994) observations that French schwa is often more stable in phrase-initial position.

The present study provides further evidence for the ability of vowels other than schwa to be reduced–even fully–in speech; even in speech obtained in "a highly controlled laboratory setting" (Torreira & Ernestus, 2011: 51). Additionally, this study joins others (e.g., Côté & Morrison, 2007) that call into question some of the longstanding assumptions held about French phonology, such as what may or may not constitute a 'weak' vowel in French.

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