Syncope in English: Fact or Fiction?  

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"…" = descriptive terms whose status as analytic tools is debatable

0. Intro
- syncope: the deletion of a zero-stressed vowel (schwa) between consonants + compression ("resyllabification") (Brittain ~ Britney) = the number of "syllables" reduces by one (vs. syllabic consonant formation: button)
- more marked constructions are produced: "coda" consonant, "consonant clusters" (secondary clusters)
- traditional descriptions distinguish betw. pre-stress (police) and post-stress (cámara) syncope

This paper: the first results of a project
Claims:  
- the pre-stress/post-stress distinction is secondary phonologically
- relevant distinction: betw. phonotactically licit vs. illicit, that is, whether the resulting secondary cluster is part of the inventory of well-formed clusters (in English)
- illicit is not necessarily defined on a language-sensitive basis
- illicit syncope has the potential to undergo phonologically (not only phonetically, no traces) → merger with lexical structures → lexicalization ⇒ intuitions (even of phonologists describing/analyzing syncope ☺)

1. Schwa deletion (syncope) in English: the facts (?)  

Syncope in English, which is both lexically and phonetically variable, targets unstressed syllables in two environments […] (i) a word-initial unfooted syllable […] and (ii) between a stressed and an unstressed syllable where the consonant following the targeted vowel is a sonorant and more sonorous than the consonant preceding […]  
The effect of the second pattern is to contract a trisyllabic sequence into a bisyllabic trochaic foot.

<table>
<thead>
<tr>
<th>post-stress syncope</th>
<th>pre-stress syncope</th>
</tr>
</thead>
<tbody>
<tr>
<td>strict sonority constraint(^1)</td>
<td>phonotactically unconstrained (Zwicky), or: less constrained, on a relative scale (Hooper(^3))</td>
</tr>
<tr>
<td>Hooper: not before obstruents, not even in (xC) clusters(^2)</td>
<td>e.g., camera, family, different, separate (adj), etc.</td>
</tr>
<tr>
<td>e.g., camera, family, different, separate (adj), etc.</td>
<td>e.g., terrain, police; also in suppose, suffice, potato, etc.</td>
</tr>
</tbody>
</table>

lexicalized cases only attested in very fast and casual speech
but: mere intuitions, criticized in corpus phonetics literature

2. Corpus data: the facts
- only partially supporting the traditional descriptions
- in certain registers, and not necessarily in very fast speech, following obstruents do in fact favour syncope and the reverse of the expected sonority effect is found (cf. esp. Dalby 1986:
- in fast reading, the rate of pre-obstruent syncope increases, with stops over fricatives
- in slow reading, post-syncope obstruents and sonorants have the same score
- in conversations stops favour syncope
- ⇒ sonority difference between members of the secondary cluster strongly favours syncope: \(R_T\) highest rate, in fast reading: \(T_R\) lowest rate)

- complications: tempo, style, dialect, intraspeaker variation, word frequency, interference with syllabic consonant formation + method of evaluation of data
- contradictory data (see also Kürti 1999), e.g.: Dalby vs. Davidson (2002): acoustic analysis of word-initial pre-stress syncope\(^4\): deletion occurs only when the resulting cluster is either found in English or conforms to a universally unmarked syllable type […] deletion is not necessarily a rate-dependent process, but can be a general characteristic of a speaker’s dialect (ibid: 1)\(^5\)

- Carlotti-Mortreux-Turcsán (2009): despite the complexity of the corpus data, it is clear that:
  the distinction between post-tonic neutralising and pre-tonic opaque syncope in particular and, licit vs. illicit syncope in general seems to be crucial for modelling native speaker’s behaviour and judgements

\(^1\) sonority/strength hierarchy: vowels – glides – \(r\) – \(l\) – nasals – fricatives – plosives

\(^2\) Hooper: the constraints on schwa deletion are not governed by language-specific syllable structure conditions but are governed by universal constraints by which sonorants in second position are favoured over obstruents

\(^3\) Hooper: stressed syllables tolerate freer clustering – for the opposite claim, see below

\(^4\) strict definition of schwa deletion to rule out any gestures that could correspond to the presence of a vowel: any part of the interconsonantal interval which included a voice bar and/or formant structure was considered part of the vowel + no \(C_1\) aspiration (= a devoiced vowel)

\(^5\) rate-dependent vs. rate-independent speakers, both observe phonotactics
3. Phonetic or phonological?
- surface phonetic phenomenon in which the phonological patterning of segments imitates the pre-deletion situation? → gradient: phonologically incomplete, preserves the syllabicity of the 'deleted' vowel, which may be signalled by phonetic cues at the deletion site, fully recoverable from the output
- phonological process? → categorial: phonologically complete, destroys syllabicity of deleted vowel, syllable-governed phonology refers exclusively to the output “syllabification”

[cf. Kager (1997) on rhythmic vowel deletion]

Answers:
- very often (usually?): phonetic traces → opaque surface structures: not transparent, that is, (some of) the conditions of a pronunciation have become obscured by another one:

Surface opacity6

<table>
<thead>
<tr>
<th>Aspiration¹</th>
<th>Tapping²</th>
<th>Voicing</th>
<th>Gemination</th>
</tr>
</thead>
<tbody>
<tr>
<td>[k']Olected</td>
<td>no tapping after [s]</td>
<td>no voiced fricatives before fortis obstruents</td>
<td>no lexical geminates</td>
</tr>
</tbody>
</table>

- no aspiration after [s] morpheme-externally
- no aspiration bef. C

N.B. rather independent of the pre-stress/post-stress and licit/illicit distinctions

- Carlotti-Mortreux-Turecsán: parsing cues for speakers: they are clear signals of underlying non-adjacency
  i.e., phonologically, there is no deletion
- phonologized syncope: no traces, merger with lexical clusters (cemetery = symmetry) → lexicalization:
  every, family, general, chocolate, mystery; Barbara, factory, mackerel, et cetera, camera, celery, business... → both licit and ‘illicit’ (see below)
- lexicalization of pre-stress syncope? pram, police, suppose, support – a much smaller set (see below)

4. Illicit?
- illicit syncope produces consonant sequences unattested in English lexically → cannot, by definition, lexicalize (?)

potato → X ptato *pt- but: tata/hatter/hatte
also: ‘cause, ‘member: loss of initial consonant, too
both the combination and the position are illicit (cf. -pt- in chapter, etc.)
vegetable, family: not illicit positionally, “bogus clusters” (cf. butler)

5. Conclusions
- key distinction: phonotactically licit vs. illicit
- word-externally, it is easier to be licit, at least positionally (cf. vegetable)
- word-initially: stricter phonotactics (“branching onsets”/“onset clusters” only) → a much smaller set of lexicalized examples
- pre-stress word-internal syncope (separate (v), nationalize): stress clash avoidance insufficient explanation: general tendency of stressed vowels to refuse to support weakening
- pre-stress very often coincides with word-initial: two problems!
- licit syncope can potentially be phonologically complete, where phonology is governed by output "syllabic affiliation" → merger with lexical structures (cemetery = symmetry, parade = prayed, support = sport) → possibility of lexicalization ☑ intuitions in traditional descriptions: neither factual (contra phonetic facts and corpus data) nor fictitious (reflect intuitions about surface opacity vs. potential lexicalization)

6. Plans for research
- phonetic investigation of the PAC⁹ corpus
- perception test

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⁶ Based on Carlotti-Mortreux-Turecsán (2009)
⁷ Hooper: original voiceless stops retain aspiration. Patterson et al.: in sp- words, 60% of /p/ unaspirated: no strong support for either a phonetic or a phonological explanation
⁸ Hooper: a schwa following a flap tends to remain undeleted (artery, watery, button, flutter...): flap is too weak – here: avoidance of opacity
⁹ The PAC project (‘La Phonologie de l’Anglais Contemporain: usages, variétés et structure: The Phonology of Contemporary English: usage, varieties and structure’)
References