

## **Portrait of a phonological cripple: what schwa can(not) do to preceding vowels in French and elsewhere**

Every phonologist knows that schwa is special. The most salient property of schwa is its own fate: diachronically speaking, it tends to disappear and to produce, in synchronic systems that precede this evolutionary stage, vowel-zero alternations.

The present talk draws attention to a property of schwa which, contrary to the events related to its own body, has not been the focus of cross-linguistic investigation in the past. The property at hand is the (in)capacity of schwa to do what regular (full) vowels do. That is, the description of many phonological processes need a special proviso for schwa in their structural description, which typically reads "except before schwa" or "only before schwa". Significantly, but without surprise, schwa can never do "more" than regular vowels; in case schwa and full vowels show impaired behaviour, schwa systematically fails to do something that full vowels do. For example, schwa may be unable to guarantee the existence of a preceding cluster: /Ng/ in German (but not in English) is simplified to [ŋ] before schwa (compare English *finger* [fɪŋgə] and German *Finger* [fɪŋɐ]).

Hence, this talk aims at compiling cases where neighbouring segments fail to be affected by schwa (but do experience the influence of full vowels). In a second step, the relevant pool of phenomena is classified according to the (non-)effect observed. Finally, I argue that theory should reflect the two families of schwa-effects that will have been identified, i.e. failure to support (e.g. preceding clusters) or failure to diminish other segments (e.g. vowel-zero alternations, cf. below).

The first thing to be done is to define which objects exactly count as schwa. I introduce a phonological, rather than a phonetic definition: a vowel is a schwa if and only if it alternates with zero. In the overwhelming majority of cases, of course, vowels that correspond to this definition are also phonetic schwas, i.e. central vocalic articulations. But there is a sizable amount of schwa effects that are triggered by vowels which alternate with zero, but are phonetically peripheral. The prime evidence here comes from Slavic, where alternating vowels are systematically non-central (e.g. all of Western [ɛ] and Eastern [ɛ,ɔ] Slavic as well as Serbo-Croatian [a]) but still fail to produce the same effect on neighbours as non-alternating vowels. The reverse is also true: there are cases where phonetic schwas do not alternate with zero and produce exactly the same effect on neighbours as peripheral vowels. One case in point is the high schwa [ɪ] that is found in Polish (spelt "y"). Hence the only thing that appears to be shared by all vowels that participate in the schwa-phenomenology is the fact of alternating with zero.

This definition being set, I review a number of phenomena where schwa has a specific (non-)bearing on neighbours. All cases that I have come across concern preceding segments, and this is the direction of most phonological processes anyway. I do not expect to find cases where schwa has a specific effect on the environment to its right. The cases of schwa-effects may be classified informally according to the segment that is affected, i.e. either a vowel or a consonant. Instances of both types will be reviewed:

1. the aforementioned distribution of [ŋg] and [ŋ] in German: "[ŋ] in closed syllables (both internal and final) and in open syllables if followed by schwa, [ŋg] in open syllables if followed by a non-schwa".

2. Dutch schwa-epenthesis: "sonorant-obstruent clusters are broken up by a schwa in final closed syllables and in open syllables if followed by schwa, while no schwa-epenthesis occurs in open syllables if followed by a non-schwa".
3. vowel-zero alternations in modern Slavic languages (e.g. Czech, Polish): "vowels in closed syllables (both internal and final) and in open syllables if followed by schwa, zero in open syllables if followed by a non-schwa".
4. French ATR of mid vowels: "-ATR vowels in closed syllables (both internal and final) and in open syllables if followed by schwa, +ATR in open syllables if followed by a non-schwa".
5. distribution of [ə] and [ɛ] in French: "[ɛ] in closed syllables (both internal and final) and in open syllables if followed by schwa, [ə] in open syllables if followed by a non-schwa".
6. vowel length in Czech: "short vowels in closed syllables (both internal and final) and in open syllables if followed by schwa, long vowels in open syllables if followed by a non-schwa".
7. o-u and ą-ę (nasal vowels) alternations in Western Slavic (Polish, Czech, Slovak, Sorbian): "u, ą in closed syllables (both internal and final) and in open syllables if followed by schwa, o, ę in open syllables if followed by a non-schwa".
8. Italian instantiation of the Romance diphthongisation (diachronic): "original Latin short stressed e, o in closed syllables (both internal and final) (festa, corpo) and in open syllables if followed by schwa (edera, mobile), ie, uo in open syllables if followed by a non-schwa (siede, nuovo)".

These are all instances that demonstrate the particular weakness of schwa: it produces the same effect on preceding segments as closed syllables, a context that is known for its damaging effect. Also, it is interesting to observe the kind of effect that schwa *fails* to produce: sometimes it fails to support "big" objects such as consonant clusters or long vowels, which, as a consequence, will somehow be damaged (they undergo shortening, epenthesis, deletion, are prevented from diphthongising...). But at other times, it fails to diminish a segment, which may therefore remain undamaged (vowel-zero alternations). Therefore, two different families of processes must be recognized: the same mechanism in exactly the same context could not possibly produce destructive (vowel-zero alternations) and supportive (the rest) effects at the same time. Accordingly, I propose to encode this natural contrast by two lateral relations, Government and Licensing. In the syllabic model that I promote, these lateral forces are multifunctional in the sense that they also account for all syllabic contrasts, i.e. Coda vs. non-Coda, open vs. closed syllables etc. This is to say that they do not serve the sole purpose of encoding the segmental effects described. Rather, an attempt is made to unify two sets of phenomena that usually remain unrelated: the definition of syllable structure and the effect thereof.

Finally, I make a point regarding the parametric situation of schwa. As a matter of fact, for each process mentioned above there is a language where schwa is not any special. That is, it behaves like a regular full vowel. For example, /Ng/ is reduced to [ŋ] before schwa in German, but not in English. Or alternation sites are vocalised before schwa in Czech, but not in Slovak (domeček "house double dim." in the former, against domøček in the latter, the e of -ek alternates with zero itself, hence is a schwa). This leaves us with a minimal parametric channel for schwa: it either behaves like a regular vowel or not. If not, it fails to produce any influence, i.e. behaves like a zero. The goal of the parameterisation and the lateral tools mentioned, then, is to capture the impressive surface-variation displayed above by only two parameters: schwa can or cannot govern, schwa can or cannot license.