What happens when sonorants branch on Nuclei

Phonological thinking since the 80s holds that melodic material associated to Nuclei can branch on empty Onsets: the result is the corresponding glide (i.e. an i branching on the following Onset like in French /li+e/ lier "to tie" produces [lije]). Probably because empty Nuclei are less well accepted than empty Onsets, the opposite movement has only been proposed fairly recently: this is when melodic material associated to an Onset branches on an empty Nucleus. The goal of the present talk is to investigate the logically possible situations that are generated when allowing for this type of configuration, and to examine what kind of empirical effects are produced. Ideally, of course, all possible representations correspond to a well-known empirical situation. I show that by and large this is indeed the case.

The most obvious empirical identity for a branching consonant are syllabic consonants (SCs): according to the classical 19th century definition, these are "consonants in vocalic function". Diachronically as well as synchronically, SCs alternate with a VC sequence (Czech kъrkъ > krk "throat", free variation in English butt(ə)n), and, according to classical description, take over the syllabic function when the vowel comes to disappear. It is thus conceivable that the physical properties of SCs (their consonanthood) are due to the fact that they are dominated by an Onset, while their vocalic behaviour comes from the fact that just like "real" vowels, they occupy a Nucleus. This solution for SCs has been adopted e.g. by Hall (1992:35s), Wiese (1986), Harris (1994:224s), Rowicka (1999:261ss), Scheer (2004:§240).

In a second step, I show that phonological theory must be able to distinguish two kinds of cluster-creating consonants: syllabic and so-called trapped consonants (TC). The latter occur for example in Polish, where they have been extensively studied by Jerzy Rubach (e.g. 1997) who argues that they are extrasyllabic. In fact TCs systematically display opposite behaviour with respect to SCs: 1) SCs count in poetry, TCs do not, 2) SCs may bear stress, TCs may not, 3) in case a vowel-zero alternation occurs to their left, the zero alternant appears before SCs (which thus behave like a vowel), but the alternation site is vocalised before TCs, 4) TCs, but not SCs, are "transparent" for voice assimilation.

In the past, SCs and TCs have not been properly distinguished: the regular way of dealing with "a lot of consonants in a row" is to say that one of them is syllabic (for example, this is the typical move in the Salish literature, e.g. Bagemihl 1991). What it means to be syllabic and how SCs may be detected other than by the presence of "many consonants in a row", however, are questions that are hardly ever raised. I argue that TCs need to be recognized as a basic phonological object, and provide illustration for the four-point checklist mentioned in order to decide who is who. Finally, I propose representations which do justice to both the antagonicity of SCs and TCs and the branching idea: SCs branch on the empty Nucleus to their left, TCs branch on the empty Nucleus to their right.

Syllabic and trapped consonants are thus the result of branching consonants ("R" hereafter) when the neighbouring empty Nucleus either precedes or follows a consonant or the word margin and is flanked, on the non-branching side, by a consonant: 1) syllabic CøRC (Cz krk), 2) syllabic CøR# (Cz Petr), 3) syllabic #øRC (Serbo-Cr rvati), 4) trapped CRøC (Pol trwać), 5) trapped CRø# (Pol Piotr), 6) trapped #RøC (Pol rtęć). These six logical possibilities need to be completed by those cases where the non-branching side of R is flanked by a vowel. Note that this generates only two configurations since the margins, without surprise, behave like a consonant, cf. above. Hence which empirical objects do 7) CøRV and 8) VRøC represent?

Let us first consider the latter. I argue that 8) has (at least) two empirical effects: for one thing, whether R branches or not controls the cross-linguistic parameter regarding the strength of the following C. That is, C is a "normal" post-Coda consonant and hence regularly strong when R does not branch, while it has intervocalic quality if R branches. Second, whether R branches or not controls a cross-linguistic parameter regarding stress assignment, i.e. whether

syllables that are closed by a sonorant are heavy (R branches) or light (R does not branch).
The former effect may be observed when studying the cross-linguistic behaviour of post-Coda consonants in regard of lenition processes. The "regular" pattern (e.g. French, German) is the so-called (disjunctive) Strong Position: word-initial and post-Coda consonants {#,C}__ are strong (Ségéral & Scheer 2001, Szigetvári 1999). There are languages, however, where only a subset of post-Coda consonants are strong, i.e. those that occur after obstruents. Consonants after sonorant Codas, on the other hand, are weak. This pattern is found for example in Greek, Germanic (Grimm's Law), Korean, Finnish and varieties of English (t-flapping, glottaling). I follow Pöchtrager's (2001) analysis in terms of the Coda Mirror theory (Ségéral & Scheer 2001) that assumes a strict CVCV constituent structure (Lowenstamm 1996): in the "regular" languages the post-Coda consonant (T in VRøTV) is strong because the following vowel is called to govern the preceding empty Nucleus (in order to satisfy its ECP) and hence does not govern T. The post-Coda consonant therefore is ungoverned but still licensed by the following V, i.e. in the most favourable position. When R branches on the following Nucleus, however, the ECP of the latter is satisfied and hence the following V is free to govern its own Onset. T therefore is both governed and licensed, which is the situation of an intervocalic consonant. I show that this is precisely its behaviour in Greek. In sum, thus, the cross-linguistic parametric space is binary (no other patterns are on record as far as I can tell), and this corresponds exactly to what basic autosegmental theory can do: have the R branching or not.
The effect regarding stress has been analyzed by Szigetvári & Scheer (2005). In CVCV, the binary parameter known as Weight-by-Position (WbP) is expressed in terms of empty Nuclei: what is really counted when the surface-interpretation talks about Coda weight are empty Nuclei: Codas are always followed by an empty Nucleus; stress algorithms always count all pronounced Nuclei (i.e. with associated melodic material), and in addition may (WbP) or may not (no WbP) count empty Nuclei. Most languages do not care whether the Coda is sonorant or obstruent. Some languages, however, are reported to count closed syllables as heavy only when their Coda is a sonorant, e.g. Kwakwala (native American Wakashan, see Wilson 1986, Zec 1995). Under the analysis presented, these languages do not have WbP, i.e. empty Nuclei are not counted. However, sonorants branch on following empty Nuclei. Being associated to melodic material, these thus count just as much as their "regularly" filled peers.
Let us finally turn to the object 7) CøRV. Its empirical identity is open to some debate: for one thing it depends on whether C is an obstruent or a sonorant. In the former case, we face the typical configuration of a branching Onset, and this is indeed what Szigetvári (1999) argues for when R branches. A problem, however, is that in such a language branching Onsets (but not singleton Onsets) should be counted by stress, a pattern that does not appear to exist. In case R does not branch, we face what is traditionally described as a Coda-capture, i.e. instances where obstruent-sonorant clusters behave like interludes. Finally, if C is a sonorant, hence R1øR2V, we are taken back to the situation 8) with an additional parameter on R1: if R1 can branch, R2 is supposed to be in intervocalic position; if R1 cannot branch, R2 is either strong or intervocalic according to whether it can (weak) or cannot (strong) branch itself. The problem here is that lenition effects on sonorants are very rare (except when they occur in Coda position), and I do not know of any evidence that allows to test the typology proposed.
In sum, thus, this talk aims at gathering the various unrelated use that has been made of branching consonants in the past, and to confront it to the generative power that follows from basic autosegmental principles when two assumptions are made: 1) empty Nuclei exist, 2) (perhaps only sonorant) consonants can branch on them. The result is a fairly good match since 5 of the 6 logically possible situations have direct empirical correspondents and exactly exhaust a cross-linguistic parametric space that is made of several binary choices. The exact fate of the sixth situation remains open for further research.