

Communication between syllables

I. Goal

One of THE fundamental principles of Government Phonology is the ECP. It states that ‘*An empty Nucleus may be unexpressed iff it is properly governed*’ (Kaye et al. 1990, Scheer and Ségéral 2001, Scheer 2004, among many others). To understand the effects of the ECP, consider two examples from Russian (data from Yearley 1995):

(1) /kusOk-O/	[kusok]	‘piece’, nom.sg.	Capital letter indicates YER
/kusOk-a/	[kuska]	„ , gen. sg.	

These forms show that if a syllable containing a so called yer (or jer) is followed by another yer, then the first yer is phonetically realized. If, on the other hand, a full vowel follows a yer, then it remains silent. GP’s claim is that only full vowels are proper governors. Since empty syllables cannot properly govern, a neighboring empty syllable must be pronounced, as required by the ECP.

In mainstream phonology the ECP is not accepted. Probably, this has to do with the fact that it relies on notions that are ‘too syntactic’. No doubt skepticism has been strengthened with the advent of the Minimalist Program.

Nonetheless, the insight behind the ECP is correct. It can be paraphrased as: *structurally poor vowels are bad licensors*. I will therefore ask the question whether we can express its insight without the notion of government. My answer will be ‘yes, we can’. Not only that, it turns out that the ‘mainstream version’ of the ECP can also explain other phenomena that, at first sight, seem quite unrelated to Russian Yer Vocalization. Thus, the claims I want to make in my talk are the following: 1) Every constituent (syllable, foot) is accompanied by a gridmark; 2) empty vowels cannot license gridmarks; 3) gridmarks spread in order to get licensed; 4) with these tools we can explain: a) Yer Vocalization, b) reductive-CL found in Unia Frisian, c) the type of Compensatory Lengthening that interacts with voice, d) Open Syllable Lengthening.

II Tools

In the theory of stress there is almost complete agreement that stress is to be represented by gridmarks. Even maximally different (recent) theories, like Szigetvári and Scheer (2005) and Samuels (2009), agree on this. There is less agreement on the question whether constituents ought to be recognized in addition to gridmarks. It is fair to say that, by now, most phonologists agree that that is indeed the case. Stress, then, is represented in terms of two modules: grid and constituents (Halle and Vergnaud 1987, and in particular Hyde 2001, 2002, 2007, 2008). By using both modules Hyde can derive, among other things: a) various Non-Finality Effects from a common source; b) ternary rhythm; c) he can explain systematic gaps in the stress inventories of the world; d) he can solve various instances of the ‘too-many-repairs-problem’. Let us assume, then, that phonological constituents, like syllables and feet (the two types I will talk about), coexist with gridmarks; they accompany each other. This is the first ingredient of my approach. The second has to do with licensing. In the spirit of GP’s ECP I propose that *vowels lacking (relevant) material cannot license gridmarks*. The fact that something like this is necessary anyway is demonstrated by the widespread phenomenon of schwa avoiding stress. If we assume that schwa lacks a place node (Anderson 1982, Van Oostendorp 2000), then it becomes clear why schwa avoids stress; being empty at a relevant level (the place node) it cannot license

the gridmark accompanying the foot. Sentani is one of the many languages where schwa avoids stress. Some examples illustrating this are given in (2). They are taken from Elenbaas (1999).

- | | |
|------------------------------------|-------------------------------|
| (2) even number of syllables | odd number of syllables |
| [fomàlére] ‘for we will go across’ | [haxòmibóxe] ‘he obeyed them’ |
| [àxəláne] ‘to the forest’ | [xànəmikóxe] ‘he called them’ |

The second tool of my approach, then, is a constraint saying that ‘a vowel which is empty at the relevant level (root node or place node) cannot license a gridmark linked to it’. This constraint is the reformulation of GP’s ECP.

III Exemplification

To see how this works, consider the relevant parts of the representations of the two Russian words *kusok* and *kuska*. C and V express the root nodes; (informal) syllables are on top, and the accompanying gridmarks are below the root nodes; segmental content is written informally above the ‘official’ representations.

- | | | |
|----------|-------------|-----------|
| (3) | k u s k | k u s k a |
| | σ σ σ | σ σ σ |
| /kus.k./ | C V C V C V | /kus.ka/ |
| [kusok] | ↘ | ↗ |
| | * * * | * * * |

The structure on the right contains one yer, which is followed by a full vowel. Being empty, the yer cannot license its gridmark. Hence, that gridmark must spread. Assuming that spreading preferably applies to the right, the gridmark spreads to the full vowel following the yer. Now the gridmark accompanying the yer is licensed by the vowel following the yer. In the representation on the left, however, no such simple procedure is possible. Here the yer in the second syllable is followed by another yer. Consequently, spreading the gridmark to the next vowel makes no sense, because after spreading the gridmark is still not licensed. There is therefore no other option but to insert features to fill a vowel (vocalization). I assume that insertion is preferably not done in an inflectional site, because inflectional endings want to be structurally simple. Insertion, therefore, takes place in the domain of the first yer. Now the (former) yer can license its own gridmark AND the gridmark of the yer following it.

Other phenomena can be explained along similar lines. One such phenomenon is what I call ‘reductive CL’. It occurs in Unia Frisian. In this language a vowel is lengthened, but only if the following vowel is reduced. This is illustrated with the following data, taken from Versloot (2008).

- | | | | | | |
|------------|----------|---------------------|----------|-----------|------------------|
| (4) <boga> | [boga] | ‘bow’, nom. sg. | <skip> | [skip] | ‘ship’, nom. sg. |
| <bogan> | [bogan] | ‘, , nom., acc. pl. | <skipe> | [ski:pə] | ‘, , dat. sg. |
| <bogum> | [bo:gəm] | ‘, , dat. plur. | <skipum> | [ski:pəm] | ‘, , dat. pl. |

In Unia Frisian vowels in unstressed position are reduced to schwa. There is one exception: /a/ is not reduced. Interestingly, whenever schwa appears, the preceding vowel is lengthened. I analyze this phenomenon in the following way. Being empty at the relevant level schwa cannot license its gridmark. That gridmark must therefore spread. The difference with Russian is that, in Frisian, it is impossible to associate two gridmarks to one vowel. For that reason an extra position must be inserted in the stressed syllable, creating length. This is why a stressed vowel is lengthened iff a following vowel is reduced to schwa.

Reformulated ECP will be further demonstrated with the type of CVCV-CL that interacts with voice, as in Serbo-Croatian (Hock 1986, Kavitskaya 2002) and Friulian (Hualde 1990). I will also demonstrate that Open Syllable Lengthening can be accounted for as well. This can be done by assuming that vowels in unstressed position have lesser licensing potentiality, as has been shown by Harris (1997).

REFERENCES

- Anderson, S. R. (1982). The analysis of French schwa: or, how to get something from nothing. *Language* 58, 534-673.
- Elenbaas, N. (1999). A unified account of binary and ternary stress; considerations from Sentani and Finnish. PhD Dissertation, Utrecht University. Utrecht: LOT publications.
- Halle, M. and J.-R. Vergnaud. (1987). *An essay on stress*. Cambridge, MA: MIT Press.
- Harris, J. (1997). Licensing inheritance: an integrated theory of neutralisation. *Phonology* 14, 315-370.
- Hock, H. (1986). *Principles of historical linguistics*. Berlin, New York: Mouton de Gruyter.
- Hualde, J. I. (1990). Compensatory lengthening in Friulian. *Probus* 2, 31-46.
- Hyde, B. (2001). Metrical and prosodic structure in Optimality Theory. PhD Dissertation, University of New Jersey, Rutgers. [Online at ROA 476, <http://roa.rutgers.edu/>].
- Hyde, B. (2002). A restrictive theory of metrical stress. *Phonology* 19, 313-359.
- Hyde, B. (2007). Non-finality and weight sensitivity. *Phonology* 24, 287-334.
- Hyde, B. (2008). The odd-parity parsing problem. Manuscript, University of Washington. [Online at ROA 971, <http://roa.rutgers.edu/>].
- Kavitskaya, D. (2002). *Compensatory lengthening: phonetics, phonology, diachrony*. New York, London: Routledge.
- Kaye, J., J. Lowenstamm and J.-R. Vergnaud (1990). Constituent structure and government in phonology. *Phonology* 7, 193-231.
- Samuels, B. (2009). The structure of phonological theory. PhD Dissertation, Harvard University.
- Scheer, T. (2004). *A lateral theory of phonology: what is CVCV, and why should it be?* Berlin and New York: Mouton de Gruyter.
- Scheer, T. and P. Ségéral (2001). La coda-miroir. *Bulletin de la Société de Linguistique de Paris* 96, 107-152.
- Szigetvári, P. and T. Scheer. (2005). Unified representations for the syllable and stress. *Phonology* 22, 37-75.
- Van Oostendorp, M. (2000). *Phonological projection: a theory of feature content and prosodic structure*. Berlin, New York: Mouton de Gruyter.
- Versloot, A. P. (2008). Mechanisms of language change: vowel reduction in 15th century West Frisian. PhD Dissertation, University of Groningen. Utrecht: LOT publications.
- Yearley, J. (1995). Jer vowels in Russian. In J. Beckman, L. Walsh and S. Urbanczyk (eds.) *University of Massachusetts Occasional Papers in Linguistics 18: Papers in Optimality Theory*. Amherst, MA: Graduate Linguistic Student Association. 533-571.