BEATS AND BINDING LAWS INSTEAD OF THE SYLLABLE

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ABSTRACT

The paper constitutes a short account of a proposal to undermine the syllable as a unit of speech organization in favour of beats and binding laws. The framework underlying the discussion is Natural Phonology (and Morphology) as originated by Stamps and Donegan and developed by Dressler. A brief critical discussion of the syllable is conducted and followed by a presentation of the paper hypothesis.

1 INTRODUCTION

Both phonetics and phonology assume some way of existence of the syllable. I suggest an attempt at detaching oneself from a tradition, cherished for centuries, to acknowledge some form of the syllable as useful and indispensable in phonetic/phonological description. When looked from outside and with a sufficient distance to obtain objectivity, what used to be called a syllable may turn out to be an unnecessary and mistaken complication of the already necessarily complex description of the speech chain. The problem as set above does not qualify for a paper-size discussion. Basically, then, I will shortly present here my counter-proposal to the syllable.

2 THE FRAMEWORK

The discussion is conducted in the framework of Natural Phonology (and Morphology) (cf. [3]). Thus, firstly, the criteria and explanations I propose with reference to the segmental, prosodic, semantic/semiotic and lexical/morphological levels of language are of a functional nature. Secondly, whenever terms like "principle", "law" or "rule" are mentioned, they are to be understood as universal or language-specific preferences, and not (1) absolute generalizations. I constrain the existence of the latter (one consequence of which is avoiding the notion of exception) to certain "intensifications" of universal preferences.

3 THE SYLLABLE?

If recognized as an identifiable entity, the syllable needs to possess some unity, constituent structure and boundaries. As to the unity of the syllable, there exists phonetic evidence for a certain stability of consonantal transitions to and from vowels rather than for a stability of the whole (7) syllable (cf. e.g. [5]). Speech error evidence seems to demonstrate a greater cohesiveness of a VC sequence as opposed to a CV one (cf. [2]), while CV is, at the same time, generally acclaimed to be a basic syllable structure.

No matter a great variety of types of constituent structures posited for the syllable, constituents tend to get organized according to the scale of sonority. However, the requirement for particular sonority slopes appears to be often violated by the languages of the world. To retain the syllable, "rescue strategies" are then introduced, e.g. Rubach and Booij (cf. [7]) would assume that an edge consonant (word-edge) does not count for a sonority slope. Doesn't this violate analytic soundness of sonority useless? To Smievcrs (cf. [8]) consonants violating the expected gradation of "Schallfülle" enforced the so called "Nebensilben" dominated, however, by "Hauptsilben". Two kinds of the syllable having different status - isn't it a complication?

As a unit, the syllable needs to possess determinable boundaries. Boundary placement, or, in other words, division into syllables (of words or longer stretches of speech), however, turns out not to be a straightforward procedure. Available hints come from, basically, two very different sources: first, speakers' ability to "syllabify", second, the application of some phonological processes in the "syllable domain". But are they really hints for "syllable boundary placement"? As for the former source, what speakers are able to do is to distinguish in the flow of speech those sounds which are more prominent against the consonantal ground, and the chunks that arise in this way are listed in the form parallel to counting. The problem with the latter source concerns the circularity of argumentation it introduces which entails arbitrariness boundary placement: one and the same process may both condition and be conditioned by the syllable boundary (e.g. a tense vs. lax vowel opposition in English, or "syllable final" devoicing in German).

Reliably enough, both speakers and phonological processes have access to words, on one hand, and to feet, on the other. Access to words is guaranteed by the existence of a lexicon, access to feet - by the fact that it is impossible not to act rhythmically (cf. [1]). A functional unit of phonology which is smaller than a word, and which shows its accessibility better than a syllable, is a beat.

4 HYPOTHESIS

I suggest that the notions of a beat, word and foot as well as morpheme suffice to make it possible for the functions of the syllable to be accounted for without maintaining it as a unit. A basic speech skeleton consists of regularly recurring beats. Beats are primary, (preferably) vocalic figures against the consonantal ground. They are preferably vocalic due to the saliency potential inherent to vowels, although consonants might take over a beat function in a number of circumstances (cf. below). Inter-relationships between beats and pre-beat and post-beat consonants are specified by a set of binding laws which look both at a "micro-level" - constituted by a single beat and consonants surrounding it, and at a "macro-level" - governed by rhythm. Consonants clustering beats coexist according to the preferred order as well. A universal preference for isochrony is rooted in universal principles of human behaviour which are reflected in one statement: it is impossible not to act rhythmically (cf. 3. above). In speech, an underlying organisational principle predicts a default tendency for equal time intervals between beats. The latter tendency is realized in different degrees
and modified versions to give a
variety of typological and
language-specific distinctions
among particular tongues. From
this derives a continuum of
language types whose one end is
occupied by the so called
"iso-syllabic" languages - i.e.
the ones in which, in the
extreme case, all beats are
regularly distributed time-wise;
and the other end is occupied by
the so called "iso-accentual"
languages - only stressed beats
count for rhythmical well as for
typological hierarchisation.
There exists a language-specific
differentiation as to how
particular languages realize a
universal preference for even
beat distribution.

Universally, the inter-relationships
between vowels and consonants in a speech chain are
based on the following criteria:
sonority, segmental strength,
perceptual salience, ease of
articulation, and symmetry in
binding consonants to vowels in
the speech chain. The latter is
meant to signify a proportional
in numbers grouping of consonants around beats which
supports an ideally regular beat
distribution time-wise. This
criterion, however, is easily
overridden by other preferences.

By means of the above criteria
one can account for the
universally preferred structure of a foot i.e. a
CiVcVCv2 with a trochaic rhythmic pattern (cf.
[4] for details). In a one-beat
content word there is a
preference for a CVC structure or for a CVV one (i.e.
a consonant followed by a long
vowel or a diphthong) by means of
which stress on this only
beat is conveyed (at least
partly, a potential change in pitch and loudness).

These structures are
traditionally called "heavy
syllables". Thus, what used
to be called a "heavy syllable" is
the preferred structure of a
minimal content word. A "light
syllable" stands for "less than
that" i.e. a single beat
structure not able to satisfy
the above minimal content word
requirements.

It is the number of vowels that is
indicative of the number of
beats in the first place. There are
two other sub-cases, however.
Firstly, the sequences
ViC and VCC(C)o. - n, although
they involve one vowel, count
for more than one beat, i.e.
they form a category in itself as a
one-beat structure and a
two-beat structure. Secondly, a
consonant may take up a beat
function.

5. CONSONANTAL BEATS

Preferably, a consonantal beat is
separated from the nearest
vowel by a consonant of a low
sonority (or, at least, lower
than that of the consonantal
beat itself).

Universally, consonantal beats are
assigned post-lexically: they
function as a result of the
resolution of a rhythmetrical
crash. Thus, for instance, if
a vowel is elided in fast/casual
speech, one of the neighbouring
consonants may take over a beat
function (e.g. Eng. \('l\it\l\) or
Pol. \('f\st\ot\) or, otherwise, a
cluster that results from the
reduction may get simplified
(e.g. Pol. \('f\st\ot\o\) --> \('f\st\o\)).

These cluster are originally,
i.e. immediately before vowel
elision, disfavoured by
universal word phonotactics as
well as, often, by language-
specific phonotactics. If such a
phonotactically disfavoured cluster is
legalized in a given
language (pre-lexically (e.g.
Pol. \('m\nw\l\), \('k\h\u\u\l\), \('\u\p\l\)
or \('n\st\mp\l\l\)), a post-lexically
resolution i.e. to enhance
sonority (or, at least, sonority
value. Specifically,
what is favoured is a constant
fall in sonority starting just
after a beat and finishing just
before another one (which
constitutes a rise). This
general preference can be most
obviously overridden by
morphology (a break in the
sonority fall enhances
morphological transparency),
but also, language-specifically,
within a morpheme.

Apart from the preference
concerning the inter-beat
consontants themselves, there are
certain regularities concerning
the way in which the consonants
tend to bind to beats. These
bindings derive from the
criteria discussed in 4. above,
as well as from the just
mentioned preference. And,
thus, in a VCV sequence, a C is
preferably bound to the
following V. This mirrors word
and foot-initial binding, but
notice also that in a VCV the
consonantal sonority fall is
impossible - there is only a
sonority rise on the second V thanks to
the preceding C, which draws
those consonants bind to a respective
preceding and following V (cf.
symmetry in 4. above), unless
sonority or stress-assignment
criteria intervene (e.g. more
consonants are bound to a
stressed beat). If there are
more than two consonants in an
inter-beat cluster, a default
binding is as above, i.e. one C
is bound to the following V and
the remaining consonants are
bound according to: the
symmetry, stressed-beat and
sonority slopes principles. The
default binding, however, is
subject to a number of potential
modifications of a language-
specific and/or post-lexical
(phonostylistic) nature.

Thus, generally, beat-counting
constitutes the basic
organizational principle of the
speech chain, while binding laws
should be understood as a set of
universal potentials invoked in
a language-specific way by
particular languages.

The reader is referred to [4]
for a more comprehensive
treatment of the issue.

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