

## THE SYLLABLE ACCORDING TO ARISTOTLE\*

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### Résumé

Les commentateurs modernes ont critiqué la définition de la syllabe selon Aristote (« un son dépourvu de signification, composé d'une muette et d'une voyelle ») au motif qu'elle ne tiendrait pas compte des syllabes constituées d'une unique voyelle. Cependant, de telles syllabes ne pouvaient être que « longues par nature », (/C $\bar{V}$ -/), quantitativement/métriquement égales aux syllabes « longues par position/convention/institution » (/C $\bar{V}$ C-C/) et à la séquence dissyllabique /C $\bar{V}$ C $\bar{V}$ /, plutôt qu'aux unités *constructionnelles*, /CV/, composées de deux unités élémentaires (*στοιχεία*) faisant partie de l'*inventaire* phonologique. Ainsi comprise, la syllabe d'Aristote aurait pu figurer parmi les notions phonologiques de base. L'inscription de la syllabe dans la catégorie du « non-signifiant », rapportée à la cohérence aristotélicienne de la distinction entre sons « signifiants » et « non-signifiants », suggère que l'idée de signe linguistique est implicitement présente dans le système aristotélicien des « parties de l'expression ».

### Mots-clés

Aristote, Denys de Thrace, N. S. Trubetzkoy, Jerzy Kuryłowicz, Wilhelm von Humboldt, syllabes phonétiques et phonologiques, élément(s), unité constructionnelle, types de syllabe, parties de l'expression

### Abstract

Modern commentators criticized Aristotle's definition of the syllable ("a non-significant sound, composed of a mute and a vowel") for not taking into account syllables containing a single vowel. Such syllables, however, could only be 'long by nature', (/C $\bar{V}$ -/), quantitatively/metrically equal to syllables which are 'long by position/convention/institution' (/C $\bar{V}$ C-C/) and to the dissyllabic /C $\bar{V}$ C $\bar{V}$ / sequence, rather than to elementary *constructional* units, /CV/, composed of two elementary *inventory* units (*στοιχεία*). Thus understood, Aristotle's syllable could have found its place among the basic phonological notions. The position of the syllable in the 'non-significant category', with respect to Aristotle's consistent differentiation between 'significant and non-significant sounds' suggests that the idea of the language sign is present implicitly in Aristotle's system of the 'parts of expression'.

### Keywords

Aristotle, Dionysius Thrax, N. S. Trubetzkoy, Jerzy Kuryłowicz, Wilhelm von Humboldt, phonetic and phonological syllables, element(s), constructional unit, syllable types, parts of expression

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## 1. INTRODUCTION

*1.1. Phonetic and phonological syllables*

The syllable belongs to the most controversial phonological notions. Ambiguities connected with it begin with the definition: ‘the minimal unit of pronunciation’. Recognized practically universally, this definition does not explain the nature (functional or physical) of the syllable and, consequently, its realm (language or speech, resp. phonology – phonetics). It is for this reason that the various approaches to the syllable usually concentrate on certain individual aspects of it, such as internal organization, coarticulation of the constituent elements, syllable nuclei, accentuation, etc.<sup>1</sup> This, in turn, creates the problem of interdependence and hierarchy of phenomena pertaining to those aspects. According to Louis Hjelmslev (1899–1965), for instance, “A syllable is a chain of expression including one and only one accent” (Hjelmslev 1938/1939, p.266). This definition implies that the syllable is subordinate to accent; hence, the conclusion that “A language without accent will be a language without syllables” (Hjelmslev 1938/1939, p.270).<sup>2</sup> But the nature of accent<sup>3</sup> itself is not unambiguous; nor is its function in different languages and, in them, in different contexts.

That the syllable is the domain of accent is taken for granted. In practice, however, accent tends to be associated with the nucleus alone, cf. “the degree of force with which a *sound* or syllable is uttered” (Jones 1976, p.45; italics mine – Yu.K.).<sup>4</sup> Likewise, N.S. Trubetzkoy’s ‘smallest prosodic unit’ is “the syllable, or more precisely the syllable *nucleus*” (Trubetzkoy 1969, p.182; italics mine – Yu.K.).<sup>5</sup> In his discussion of prosodic properties N.S. Trubetzkoy (1890–1938) stresses that they “do not belong to the vowels as such but to the *syllables*” (Trubetzkoy 1969:170).<sup>6</sup> At the same time, consonants, although an integral part of the syllable, are regarded as “prosodically irrelevant”, unless they are syllabic; the same category may include vowels which in this case are ‘nonsyllabic’ (ibid.).<sup>7</sup>

- 1 For an extensive overview of modern approaches to the syllable and analysis of the relevant publications, see Blevins 1995.
- 2 More radical is the position of K.J. Kohler; according to him, “the syllable is either an UNNECESSARY concept, because the division of the speech chain into such units is known for other reasons, or an IMPOSSIBLE, as any division would be arbitrary, or even a HARMFUL one, because it clashes with grammatical formatives” (Kohler 1966, p.207).
- 3 Cf. “Accents may be manifested by different degrees of stress, by different degrees of pitch, by different movements of stress, by different movement of pitch” (Hjelmslev 1938/1939, p.267).
- 4 Cf. also the generative phonology rule,  $V \rightarrow [1 \text{ stress}]$ , that reads, “assign primary stress to a *vowel*” (Halle & Keyser 1971, p.5; italics mine – Yu.K.).
- 5 „[dass] die kleinste prosodische Einheit in den einen Sprachen die *S i l b e* (genauer: der Silbenträger) [...] ist“ (Trubetzkoy 1939, p.179).
- 6 „Die prosodischen Eigenschaften kommen nicht den Vokalen als solchen, sondern den Silben zu“ (Trubetzkoy 1939, p.166).
- 7 „Es können aber auch Vokale sein, die in diesem Falle ‘unsilbisch’ sind“ (ibid.).

The terms ‘vowel’ and ‘consonant’ may signify notions that belong to two different realms. The terms can be “phonic or acoustic”<sup>8</sup> (Trubetzkoy 1969, p.93) reflecting certain universal principles of phonation. Trubetzkoy compares it to whistling or singing a melody into the mouthpiece of a tube,<sup>9</sup> with opening and covering alternately the other end of that tube: the stretches of speech chain between closing and opening the orifice<sup>10</sup> will correspond to consonants and those between opening and closing it<sup>11</sup> to vowels (see Trubetzkoy 1969, p.93-94). Successions of such nonvocoid and vocoid ‘sounds’ make up *phonetic syllables*, also a universal notion that can be described in terms of chest pulses, sonority peaks, etc.<sup>12</sup> But these successions do not presuppose boundaries, either within or between them, unlike *phonological syllables*, which are constructional units<sup>13</sup> composed of distinct elements, phonemes.

In connection with the problem of the phoneme-syllable interdependence, Trubetzkoy cites (although not without reservations) Roman Jakobson’s point of view: “In those languages where the syllable nuclei are exclusively monophonematically evaluated vowel phonemes, the difference between vowels and consonants can be defined as follows: vowels are those phonemes capable of functioning as syllable nuclei, while consonants are those phonemes that cannot occur as syllable nuclei. One might be inclined to go even further in this direction; since there is no language in which the vowels would not occur as syllable nuclei, vowels can be defined as those phonemes that function as syllable nuclei [...] and consonants as those phonemes that are nonsyllabic...” (Trubetzkoy 1969, p.222, n. 213).<sup>14</sup>

- 8 „Vokal’ und ’Konsonant’ sind „I a u t l i c h e, d. i. akustische Begriffe“ (Trubetzkoy 1939, p.83).
- 9 „Der Phonationsprozeß der menschlichen Rede kann am besten durch folgendes Schema dargestellt werden: jemand pfeift oder singt eine Melodie in die Eingangsöffnung einer Röhre hinein und deckt die Mündungsöffnung dieses Rohres mit der Hand bald zu, bald wieder auf“ (Trubetzkoy 1939, p.83-84).
- 10 „die Abschnitte zwischen dem Zumachen und dem Aufmachen der Mündungsöffnung“ (ibid.).
- 11 „die Abschnitte zwischen dem Aufmachen und dem Zumachen derselben Öffnung“ (ibid.).
- 12 Cf. “All languages contain PHONETIC SYLLABLES which are units of one or more segments during which there is a single chest pulse and a single peak of sonority or prominence. The investigator can begin his studies of distribution and analysis of vowels and consonants in terms of the relationship of various vocoid and nonvocoid segments to phonetic syllables.” (Pike 1947, p.60).
- 13 E.C. Fudge’s term which pertains first of all to the level of morphology: a morpheme or a string of morphemes (Fudge 1969, p.258). In a broader sense, this term was used by Vadim Kasevich who discerns two types of units, viz. *constructional* (syllables, sentences) and *inventory* (phonemes, morphemes), syntagmatic and paradigmatic respectively (see Kasevich 2006, p.99).
- 14 „In jenen Sprachen, wo die Silbenträger ausschließlich monophonematisch gewertete Vokalphoneme sind, kann der Gegensatz zwischen Vokal und Konsonant auf folgende Weise definiert werden: Vokale sind solche Phoneme, die als Silbenträger fungieren können, Konsonanten sind dagegen solche Phoneme, die als Silbenträger nicht auftreten können. Man könnte geneigt sein in dieser Richtung noch weiter zu gehen. Da es keine Sprache gibt, wo die Vokale nicht als Silbenträger auftreten würden, könnte man die Vokale als solche Phoneme definieren, die entweder in ihren Grundvarianten oder als merkmallose Glieder einer Silbigkeitskorrelation unsilbisch sind“ (Trubetzkoy 1939, p.169, n. 1).

It follows that phonemes and syllables presuppose each other;<sup>15</sup> so do the rules of segmentation and combinatory rules, paradigmatic and syntagmatic respectively. As any constructional unit, the syllable does not have an invariant, which does not preclude it from being regarded as a functional unit, both universal (any language has certain rules of combining its elementary units) and language specific in terms of their manifestation in each particular case.

## 1.2. Aristotle's syllable

Aristotle (384–322 BC) defines the syllable as “a non-significant sound, composed of a mute and a vowel” (App. IA.3)<sup>16</sup>. Aristotle's near-contemporaries refer to the two constituent parts of the syllable as ‘elements’ or ‘letters’<sup>17</sup> (so do some of the modern editors and commentators<sup>18</sup>), the two terms corresponding to sounds and their designation in writing respectively.<sup>19</sup>

Among *στοιχεία*, Aristotle distinguishes a vowel, a semi-vowel and a mute: “A vowel is that which without impact of tongue or lip has an audible sound. A semi-vowel, that which with such impact has an audible sound [...] A mute, that which with such impact has by itself no sound, but joined to a vowel sound becomes audible [...]” (Butcher 1902, p.73).<sup>20</sup> This is reminiscent of Trubetzkoy's description of phonation, with its vocalic and consonantal sounds combining into phonetic syllables (see above).

15 Cf. in this connection, “I remarked [...] that phonological definitions of the two types of phoneme rested upon their syllabicity (vowels do, consonants do not, make syllabic nuclei), so that definitions of the syllable utilizing vocalic and consonantal contrast could not but be circular” (Pulgram 1970, p.41).

16 Quoted by Halliwell (1995, p.98, 100 – Greek text) and Butcher (1902, p.71, 73, 75 – translation).

17 *Γράμματά ἐστιν εἰκοσιτέσσαρα ἀπὸ τοῦ α μέχρι τοῦ ω. Γράμματα δὲ λέγεται διὰ τὸ γράμμαϊς καὶ ξυσμαϊς τυποῦσθαι [...] Τὰ δὲ αὐτὰ καὶ στοιχεῖα καλεῖται διὰ τὸ ἔχειν στοιχόν τινα καὶ τάξιν* (Dionys. Thr. *Ars Grammatica*, §6 (7b)2-6, see Uhlig 1883, p.9) “There are twenty-four letters from α to ω. They are called letters (*γράμματα*) from being formed of lines (*γράμμαϊς*) and scratches. [...] They are also called elements (*στοιχεῖα*) from being in a certain series (*στοιχός*)” (Davidson 1874, p.5).

18 For example, S.H. Butcher translates *στοιχεῖον* as ‘letter’ (see App. IA.1); cf. also “[W]e pass from letters to syllables” (Lucas 1968, p.199).

19 The following observation of Mirra Gordina could be added to Jean Lallot's most detailed treatment of the relationship between the element and the letter (Lallot 1998, p.96-99): “It is clear that the Greek philosophers discerned between the sound (phoneme in our terminology) and its designation in writing, although they used one and the same term for both. This situation arose because the alphabet was originally an almost exact phonemic recording with very few discrepancies between the basic (alphabet) phonemic value of the letter and its reading in the text. Therefore one and the same term could have different meanings, without mixing the notions” (Gordina 2006, p.11; my translation – Yu.K.).

20 *ταύτης δὲ μέρη τὸ τε φωνῆεν καὶ τὸ ἡμίφωνον καὶ ἄφωνον. ἔτιν δὲ φωνῆεν μὲν τὸ ἄνευ προσβολῆς ἔχον φωνὴν ἀκουστήν, ἡμίφωνον δὲ τὸ μετὰ προσβολῆς ἔχον φωνὴν ἀκουστήν ... ἄφωνον δὲ τὸ μετὰ προσβολῆς καθ' αὐτὸ μὲν οὐδεμίαν ἔχον φωνήν, μετὰ δὲ τῶν ἐχόντων τινὰ φωνὴν γινόμενον ἀκουστόν ...* (1456b 24-30).

Aristotle stresses that *στοιχεῖον* is not every indivisible sound, but only one which can form part of a complex sound<sup>21</sup> and which belongs to human speech.<sup>22</sup> In other words, a ‘sound’ (*φωνή*) represents an ‘element’ in speech in the same way as a ‘letter’ represents it in writing. In this context, *στοιχεῖον*, the smallest part of diction, can be regarded as an analogue of the phoneme in its constitutional function. In this respect, *στοιχεῖον* is closest to the phoneme of Lev Ščerba’s (alias Leningrad/St. Petersburg) school.<sup>23</sup>

‘Distinctions’ that characterize *στοιχεῖα* are closest to D[istinctive] F[eatures] in most phonological schools, cf. “These are distinguished according to the form assumed by the mouth, and the place where they are produced; according as they are aspirated or smooth, long or short; as they are acute, grave, or an intermediate tone; which inquiry belongs in detail to a treatise on meter” (Butcher 1902, p.73).<sup>24</sup>

The reference to ‘meter’<sup>25</sup> adds to this description a syntagmatic dimension. Indeed, the organization of poetic line, by its very nature, takes into account all the aspects of syntactics, including the possibility of combining elements into phonological syllables. In this way, Aristotle recognizes, tacitly, the possibility of different types of combinations, both the elementary /CV̄/-syllable and other more complicated structures (see 2. below).

### 1.3. Aristotle’s critics

Nineteenth- and twentieth-century commentators criticized Aristotle for not knowing that the syllable may consist of a single vowel (Steinthal 1890, p.259; Belardi 1974, p.49, 57). As I. A. Perelmuter (1929–2015) remarked in this connection, “this understanding is completely in agreement with the etymology and original meaning of the word *συλλαβή* ‘syllable’ [...] It is only much later that Classical scholarship discovered that the syllable may consist of a vowel alone” (Perelmuter 1980, p.170).

True, later authors spoke not only about /CV̄/-, but also /V/-syllables. As Dionysius/Dionysios Thrax (ca. 170–90 BC) has put it, “A syllable is *properly* a

21 *φωνῆ ἀδιαίρετος, οὐ πᾶσα δὲ ἀλλ’ ἐξ ἧς πέφυκε συνετὴ γίνεσθαι φωνή* (1456b 22-23; Butcher 1902, p.72).

22 *καὶ γὰρ τῶν θηρίων εἰσὶν ἀδιαίρετοι φωναί, ὧν οὐδεμίαν λέγω στοιχεῖον* (1456b 23-25) ‘for even animals’ have indivisible sounds, none of which I call an element’ (Butcher 1902, p.72; Halliwell 1995, p.99 – translation).

23 Cf. “The only function of the phoneme is constitutional. The ability to distinguish words is the property of the phoneme that follows from this function” (Zinder 1997, p.63; my translation – Yu.K.).

24 *ταῦτα δὲ διαφέρει σχήμασιν τε τοῦ στόματος καὶ τόποις καὶ δασύτητι καὶ ψιλότητι καὶ μήκει καὶ βραχύτητι, ἔτι δὲ δξύτητι, καὶ βαρύτητι καὶ τῷ μέσῳ περὶ ὧν καθ’ ἕκαστον ἐν τοῖς μετρικοῖς προσήκει θεωρεῖν* (1456b 30-34).

25 This does not mean necessarily that poetry, not language, was in the focus of Aristotle’s interests, cf. “metre is not the subject that A. treated, unless in the lost *De Musica*” (Lucas 1968, p.200).

combination of a consonant with a vowel or vowels, as *Kāρ* [‘a Carian’], *βoῦς* [‘a bull’]. *Improperly*, we speak of a syllable as composed of a single vowel, as *ᾱ*, *ῆ*” (App. II.1; italics mine – Yu.K.).

## 2. DIONYSIUS THRAX: ‘LONG’ SYLLABLES

Dionysius’ ‘improper’ *ᾱ*, and *ῆ* are syllables long ‘by nature’ (*φύσει*), i.e. as their nuclei they have either “the long elements” as in the first syllable of *ῆρως* [‘hērōs’], or “one of the two-valued vowels pronounced in its long value”, as [the first vowel] in *Ἄρης* [‘Ares’] (App. II. 2A α, β).

Dionysius’ other ‘long category’ includes the *θέσει* syllables, i.e. those long ‘by position’ (Davidson 1874, p.7), or ‘by convention’ (Kemp 1986, p.349), or else ‘by institution’<sup>26</sup> (Lallot 1998, p.49): (a) when the syllable “ends in two consonants”, as in *ἄλς*; (b) when “two consonants follow a short vowel or a short form of a vowel”, as in *ἀργός*; (c) when it “ends in a single consonant and the next syllable begins in a consonant”, as in *ἔργον*, plus a vowel (d) “followed by” or (e) “ending in a double consonant”, *ἔζω* and *Ἄραψ*, respectively (see App. II.2B).

Dionysius does not explain what the words of the five types have in common, nor what he means by ‘syllable length’. The words in (a) and (e; the second syllable) may suggest that it is merely the sum of the syllable constituents, two consonants being equal in length to a vowel. The best illustration that this is contrary to the role these elements play in language would be Trubetzkoy’s metaphoric description of phonation and the role in it of consonants and vowels (see notes 9–11 above). Besides, mechanistic addition of paradigmatic elements will necessarily disregard syntagmatic combinatory rules that, among other things, include boundaries between the elements combined.

The intervocalic /CC/ sequence in the disyllabic (b), (c) and (d) words may, in principle, belong to the following syllable, either completely (b: *ἀ-ργός*, d: *ἔ-ζω*) or partially (c: *ἔρ-γον*) (see Lallot 1998, p.110). If, however, (b) and (d) be syllabified as *ἀ-ργός* and *ἔ-ζω*, the first syllable in both will be similar to that of *βρέ-φος* (with a naturally short vowel; see below) or in *Ἄ-ρης* (with a doubtful vowel assumed as short); both are short (‘by nature’), according to Dionysius (see App. II, 3), unlike the “(a) – (e)” types which he includes in the long category.

In words like *ἔργον*, (c), the boundary is traditionally placed in accordance with the rule set up for combinations inadmissible word-initially, viz. within the intervocalic *-ργ-* cluster (see Lallot 1998, p.110).

<sup>26</sup> *Par institution*, cf. « la traduction reçue ‘syllabe longue *par position*’, calquée sur le latin *positione* traduisant *thései* n’est pas fidèle au grec où l’opposition *phúsei-thései* a sa valeur philosophique la plus constante » (Lallot 1998, p.109).

The rule is neither absolute, nor universal. For example, in Russian *bočka* ‘a barrel’ *boč-ka* is prescribed as typographic syllabification, but in actual speech the open-syllable tendency prevails, viz. *bo-čka*. Russian has practically no syllabification constraints. In English, on the other hand, *empty* will be syllabified /emp-tɹ/, complying to the rule in question, but *establish* cannot have a boundary before /bl/, a legitimate word-initial cluster, because /æ/, as well as the other English checked vowels, is inadmissible word-finally (cf. Pulgram 1970, p.47, n. 14; p.75–77), or more precisely, in an open syllable that presupposes a free vowel.

In Greek, it is syllable quantity that depends on the structure of a syllable (see above)<sup>27</sup>, and thus on syllabification, in particular, within intervocalic sequences, /VC-C/ or /V-CC/. One type of syllabification is based on the general principle postulated above, which, according to Michel Lejeune, is applicable not only to *ἔργον*, but also to *πότ-μος*, *πόσ-τος*, *πόρ-νος*, *πόν-τος* (Lejeune 1972, p.284, with reference to Maurice Grammont’s *Traité de phonétique générale*<sup>28</sup>). He adds, however, that in some dialects (including Attic) “à l’intérieur du mot certains groupes ont pu appartenir tout entiers à la syllabe qui suit : hom. *πότ|μος* mais att. *πότ|μος*” (ibid.). The same applies to *muta-cum-liquida* groups, cf. short-syllabic *τέκνον*, *πάτρι* and *ἐχρήσθη* in *Oedipus at Colonus* vs *πάτρι* or *ἐκλυε* and *πότνια*, scanned –U and –UU respectively, in Homer (Lejeune 1972, p.289, 290).

Quantity variation in poetry<sup>29</sup>, besides syllabification preferences in the dialects, reflects regularities connected with the structure of different constructional units within their boundaries. Dionysius’ five types of the *θέσει* syllables suggest a non-Attic type of syllabification in the /VC-CV/ sequence with a closed syllable<sup>30</sup> before the boundary not only in (c), *ἔργον*, but also in (b), *ἀγρός* and (d), *ἔξω*. These words differ from the (a) and the (e) type, *ἄλς* and the second syllable of *ἄραψ* respectively. The difference becomes neutralized in the paradigm, in particular, Dat. Pl., *ἄλσί(ν)*, *ἄραψι*, with the interconsonantal boundary similar to that of *ἀγ-ρός* and *ἔρ-γον*.

It follows that all the syllable types mentioned by Dionysius should be regarded as belonging to one and the same category, namely, closed syllables and, for this reason, ‘syllables long by convention/position/institution’ (see above).

27 « Est longue, à l’initiale ou à l’intérieur du mot, toute syllabe ouverte dont la voyelle est longue [...] et toute syllabe fermée, que la voyelle soit brève ou longue » (Lejeune 1972, p.286).

28 « Dans l’incertitude où l’on demeure, faute d’information expérimentale, sur la syllabation, nous nous en sommes tenu à la théorie de M. Grammont, qui est la plus commode pour l’exposition des faits » (Lejeune 1972, p.284, n. 3).

29 Cf. « [S]i parfois les tragiques (beaucoup plus rarement les comiques) traitent encore de telles syllabes comme longues, c’est par tradition et sous l’influence du modèle homérique ; en revanche, le groupe : occlusive sonore + nasale n’a pas cessé, en attique, d’allonger régulièrement la syllabe qui précède » (Lejeune 1972, p.290).

30 « On appelle *fermée* toute syllabe qui se termine par une consonne » (ibid.).

Syntagmatically, the sole prosodic function of the second consonant in the cluster is to mark the beginning of the second syllable,  $-\rho(\acute{o}\zeta)$ ,  $-\gamma(\sigma\nu)$ , and, in this way, the boundary within the intervocalic /CC/ cluster. (This function is concordant with the very nature of the consonant, “the production of an obstruction and the overcoming of such an obstruction”, according to Trubetzkoy (1969, p.94)<sup>31</sup>; see n. 10 above.)

Dionysius misleadingly uses one and the same term,  $\mu\alpha\kappa\rho\acute{o}\zeta$ , for both the syllable and the (vocalic) ‘element’ ( $\sigma\tau\omicron\iota\chi\epsilon\acute{\iota}\omicron\nu$ ). Even in the case of vowels, ‘length’ can mean two different things, viz. ‘duration’, a physical characteristic of a vowel, the same as the “absence of any obstruction” (Trubetzkoy 1969, p.94)<sup>32</sup>, and a distinctive feature, opposed to ‘shortness’, which is responsible for syllable quantity<sup>33</sup>, as well as its structure and the place of the boundary. In other words, ‘vowel length’ performs the same function as the consonants in the /CC/-cluster in the syllable ‘long by position/convention/institution’, cf.  $\acute{\alpha}\gamma\text{-}\rho\acute{o}\zeta$  (‘long by position’) and  $\acute{\alpha}\text{-}\rho\eta\zeta$  (‘long by nature’).

### 3. SYLLABLE BOUNDARIES. ‘SHORT’ SYLLABLES

One of the manifestations of the similarity of the two types of long syllables is the functioning of both as ictuses in quantitative verse, cf.

(1) ἐξέτε’ ἀδμήτην βρέφος ἡμίονον κεύουσιν

‘a mare of six years, unbroken, with a mule foal in her womb’ (*Iliad* 23.266)

TABLE 1. SYLLABLES AND FEET: GREEK

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
έ	ξέ	τε’	άδ	μή	την	//	βρέ	φος	ή	μί	ο	νον	κυ	έ	ου	σαν
-	υ	υ	-	-	-	//	υ	υ	-	υ	υ	-	υ	υ	-	X
2	3	3	2	1	1	//	3	3	1	3	3	2	3	3	1	X
DACTYL			SPONDEE		DACTYL			DACTYL			DACTYL				X	

1: syllable long by nature; 2: syllable long by convention/position; 3: short syllable; X: quantity neutral.

31 „die Herstellung eines Hindernisses und die Überwindung dieses Hindernisses“ (Trubetzkoy 1939, p.84).

32 „die Unbehindertheit oder die Hindernislosigkeit“ respectively (Trubetzkoy 1939, p.84).

33 It must have been the Indian grammarians who were the first to point out to the two types of syllables, ‘light’ and ‘heavy’, reserving the terms ‘short’ and ‘long’ for vowels (see Allen 1965, p.91-92; 1974, p.97-98).



Table 1 demonstrates syllables long by nature (F, J, P) or by convention/position/institution (A, D, M), combined with short ones to produce feet. This is typical of quantitative meters generally, a short syllable being normally attached to a long one, either enclitically, as in trochee (–U), or proclitically, as in iamb (U–).

In combination with a long syllable, (ἀδμή)-την, βρέφος makes up a dactylic foot, as FHI in Table 1, but in principle, spondee (– –) could be used instead, as in DE,<sup>34</sup> two short syllables counting as a long one and vice versa. This suggests that a short syllable is a kind of ‘building block’ of the quantitative foot. In this capacity, it must have boundaries separating it from ‘long syllables’, as well as from similar blocks, βρέ-φος (within /CǂCǂ/).

‘Long syllables’ have an independent existence, as it were, either as words in their own right (Κᾶρ, βοῦς) or in combination with other syllables within a word. The boundary after them can be marked by a consonant within the intervocalic /CC/-sequence (‘long by position’), ἀγ-ρός, or by length of the vocalic nucleus, (‘long by nature’) ᾗ-ρης. The left boundary may coincide with that of a word, as in ἀγ-ρός, so that the consonant slot remains vacant. This also applies to the ‘improper’ syllables’, such as ᾗ, ῆ, which, in this context, are similar to the first syllable of ᾗ-(ρης).

Segmentation of the /CǂCǂ/-sequence does not presuppose an ‘independent existence’ of the resulting units. Therefore the boundary within it is of a different nature, the consonantal onset in /Cǂ-C/ being the only means both to mark the beginning of the second syllable and to separate it from the first one (βρέ-φος). In this context, the two *elements*, a ‘mute’ and a ‘vowel’, must be regarded as a minimal and necessary condition of the very existence of a short syllable, or the syllable per se, as a unit of meter and, at the phonological level, an elementary *constructional unit*.

#### 4. PARALLELS

##### 4.1. Latin

A similar organization of poetic lines and feet can be come across in other poetries based on the quantitative principle, cf.

(2) *Arma virumque canō, Trō-iae quī p̄rīmus ab ōrīs*

‘I sing of arms and the man who first from the shores of Troy’ (Virgil, *Aeneid* I,1)

34 Likewise, tribrach (UUU) could, in principle, replace trochee (– U) or iamb (U –).

TABLE 2. SYLLABLES AND FEET: LATIN

<i>Ar</i>	<i>ma</i>	<i>vi</i>	<i>rum</i>	<i>Que</i>	<i>ca</i>	<i>nō</i>	//	<i>Trō</i>	<i>iae</i>	<i>quī</i>	<i>prī</i>	<i>mus</i>	<i>Ab</i>	<i>ō</i>	<i>rīs</i>
-	U	U	-	U	U	-	//	-	-	-	-	U	U	-	-
2	3	3	2	3	3	1	//	1	1	1	1	3	3	1	1
DACTYL			DACTYL			SPONDEE		SPONDEE		DACTYL			SPONDEE		

1: syllable long by nature; 2: syllable long by convention/position; 3: short syllable.

#### 4.2. Gothic

The above structures exist not only in certain poetic systems, but also in (natural) languages, which have the  $/(C)\bar{V}-/ \sim /(C)\check{V}C- / = /(C)\check{V}C\check{V}- /$  equality, e.g. in Gothic, cf.

(3) *dō-meis* ‘(you) judge’, *wan-deis* ‘(you) turn’ and *miki-leis* ‘(you) praise’ vs *was-jis* ‘(you) dress’.

The place of the boundary, after the last consonant of the root (*was-jis*) or before it (*dō-meis*, *wan-deis*, *miki-leis*), reflects segmentation into rhythmic units, determining the choice of the post-radical element, [j] syllable initially and [i] after a consonant, as well as the form of the suffix, either *-ei-* /i:/ (= /i̇ + i̇/) or *-ji-* /j̇ + i/ (Sievers’ Law), demonstrating the biphonemic nature of the long vowel. This means that in the syllable *-eis-*  $/(C)\bar{V}-/$  can be interpreted as  $/(C)\check{V}(C)\check{V}/$ , i.e. “UU” instead of “-“. Whether the same applies to long vocalic nuclei generally, either in Gothic or elsewhere, depends on the overall phonemic/prosodic pattern at each particular stage of the evolution of a given language and, consequently, procedures to establish the divisibility of long vocalic nuclei and/or their prosodic equality to disyllabic  $/(C)V\check{C}V/$  sequences (see Kleiner 1999).

Left of the boundary are syllables long by nature  $/(C)V:-/$ , *dō-*) or position  $/(C)\check{V}C- /$ , *wan-/was-*), which, in this respect, behave similarly to the disyllabic  $/(C)\check{V}C\check{V}- /$  structure (*miki-*), as in Greek (*βρέφος*) or Latin (*bene*).

In Gothic, the equality of long syllables and disyllabic  $/(C)V\check{C}V/$  sequences, in turn, divisible into two short syllables, manifests itself in certain linguistic mechanisms (see above), while in Greek and Latin, the indication of the same is verse structure. But to quote W.S. Allen (1964, p.3), “[t]he underlying material of verse is language. Therefore we should not attribute to verse phenomena which are not present ... in the language upon which it is founded”. The opposite is also true:

everything present in poetry exists in the language upon which it is founded. This is applicable to the two types of units, viz. (1) the units of rhythm, long syllables plus the /C/  $\check{V}C\check{V}$ -/ sequence, and, within the latter, (2) short open syllables, each being the minimal prosodic unit of both the quantitative meter and the language, upon which it is based.

## 5. SYLLABLE AND MORA

The Alexandrian tradition of classifying syllables into ‘long’ and ‘short’ ones did not fail to influence European linguistics and the study of Indo-European languages that were not necessarily comparable to Greek. To some extent, it may be due to a similar behavior, apropos segmentation rules, of the /V:/-syllable in languages with length distinctions and syllables ‘long by nature’ in Greek (Latin, Gothic, etc.). Less obvious is identification of short-vowel syllables, with the nucleus either followed ‘by two or more consonants’ or by a ‘single consonant before a vowel’, with those long and short ‘by position’.

Since the 19th century, prosody in languages that discern the two types of syllables equal quantitatively to the /C $\check{V}C\check{V}$ -/ sequence has been described in terms of *morae*, a ‘mora’ denoting “[t]he shortest time in which a syllable can be pronounced”; short and long syllables contain one and two morae respectively (see Donaldson 1848, p.16).

Originally limited to the description of Classical meters, the term (and the notion) then acquired linguistic significance, although fairly uncertain: some regard it as a conventional unit of quantity/length, others as a phonetic and phonological reality. For N. S. Trubetzkoy it was ‘Zweigliederigkeit’ of the syllable nucleus (Trubetzkoy 1939, p.172-174),<sup>35</sup> and for James D. McCawley (1938–1999) “something of which a long syllable consists of two and a short syllable consists of one” (McCawley 1968, p.57; italics mine – Yu.K.).

Thus understood, the term ‘mora’ became applied to languages different phonologically and/or typologically, such as Middle High German (Prokosch 1939), Contemporary Standard German (Vennemann 1988), Modern English (Clements & Keyser 1983) and Japanese (McCawley 1968). None of these languages has the {/CV:-/ (long by nature and position) = /CVC-C/} equality, which is a sine qua non of mora-counting. In practice, this means a rejection of the very notion of syllable as a *linguistic* unit.

Interestingly, linguists and historians of linguistics have overlooked one very

35 Divisibility, either of the syllable or the nucleus is typical of many theories of mora counting, cf. I.M. Tronskij (1897-1970): “A boundary between the morae of a syllable [in Latin] ... lies between the morae of a long vowel (or between the elements of a diphthong) or between the vowel and the consonant closing the syllable, when the vowel is short” (Tronskij 1960, p.88; my translation – Yu.K.). Here, even parts of a vowel are regarded as morae.

important fact: describing their, allegedly ‘mora-counting’ languages, the Greek and Latin grammarians were able to do without the notion of mora, being content with the /CV/-syllable (de facto, Aristotelian) as the minimal unit of quantity both in poetics and language. Indeed in Aristotle’s approach to the syllable, the notion of mora is unnecessary. It will not be a mistake to say that this approach reflected the speakers’ intuition formalized by Aristotle.

## 6. THE SYLLABLE WITHIN THE SYSTEM OF LINGUISTIC NOTIONS

One problem in connection with the syllable as a linguistic notion is its relationship with other units (resp. types of segmentation), phonological, on the one hand, and lexical/grammatical, on the other. Aristotle solved this problem by placing the syllable in the ‘non-significant’ category. Besides the definition of it as a combination of two indivisible sounds (= ‘elements’), also non-significant, it follows from his comment on word division, cf. “[i]f we separate one syllable of the word *ἀνθρώπου* ‘human’ from the other, it has no meaning; similarly in the word *μῦς* ‘mouse’, the part *ῦς* has no meaning in itself, but is merely a sound” (App. IB.5). Indeed, the word, a double-sided entity (‘sign’), in addition to ‘sound image’ (*signifiant*), has meaning (*signifié*), which the syllable lacks. This automatically removes one of K.J. Kohler’s objections, namely, that the syllable is “a harmful concept”, because “it clashes with grammatical formatives” (see above, n. 2). But a “clash” between units belonging to different planes is inevitable and necessary, for their boundaries must not coincide by definition.<sup>36</sup>

According to Jerzy Kuryłowicz (1895-1978), “[a]s a possible syllable of a given language we can only consider a sound-complex that would be phonologically admissible as an independent word” (Kuryłowicz 1948/1949, p.37). Consequently, “a word like [Latin] *sēnex* cannot be divided into syllables” and its “first syllable *sē-* would be without parallel in Latin” (ibid.).

It should be noted, however, that this principle applies to a limited number of languages, for example, Russian, where, indeed, any syllable can function as a word, cf.

(4) *papa* ‘daddie’ = *pa* /pa/ ‘a step in dancing’ + *pa* ‘the same’.

Besides, the syllable and the word belong to two different planes, ‘expression’ and ‘content’ respectively. To become a word a syllable must acquire meaning, and conversely, a syllable without a meaning is but a constructional unit of the

36 Cf. “The manner of the tie-up between syllable and morpheme cannot be understood unless a clear distinction is made between the MORPHEME (a functional grammar-oriented unit, not decomposable into phonemes) and the MORPH (an overt, phonology-oriented unit, consisting in general of a sequence of phonemes)...” (Fudge 1969, p.258).

plane of expression, i.e. a combination of phonemes (“a mute and a vowel”). This applies equally to Russian quantity neutral syllables and Latin short ones.

Therefore, from the point of view of its structure, the parallels of *sě-* are *bě-*, *ně-*, etc. which are ‘building blocks’ in *bene* and *nemo*.

An early description of the syllable in terms of the two planes belongs to Wilhelm von Humboldt (1767-1855): “The syllable forms a unity of sound; but it becomes a word only when it acquires meaning, which often requires a combination of several [syllables]. Therefore a double unity arises in the word, [that of] a sound and meaning” (Humboldt 1836, p.74).<sup>37</sup>

By allocating the two types of units to different realms, (a) ‘significant’ and (b) ‘non-significant’ sounds, Aristotle was able to avoid the grave methodological mistake of confusing language levels.

It is no coincidence probably that in his classification of the *μέρη λόγου* (‘utterance/expression/diction’, see App. IA1), Aristotle, consistent enough in distinguishing between significant and non-significant sounds (= utterances), places the syllable, a unit that acquires its function only as a combination of ‘elements’ (potentially, a word) between ‘the element’ (*στοιχείον*), ‘an indivisible non-significant sound’, (App. IA.2), similar to the phoneme, and the *σύνδεσμος* ‘a connective’ that acquires a meaning only in combination with other words in a sentence (App. IA.4).

Consistency in differentiating between ‘significant and non-significant sounds’, in fact, the plane of expression and the plane of content, makes Aristotle’s system of the ‘parts of expression’ a precursor, as it were, of the idea of the language sign, not to be formulated until much later, by the Stoics and re-discovered by Ferdinand de Saussure (1867-1913).

## CONCLUSION

For some reason, linguistics has avoided axiomatic theories and notions that make a science a science. It chose a different way, not only re-interpreting the predecessors’ ideas in accordance with new paradigms, but, not infrequently, ignoring them as purely historical facts, with no value to modern scholarship. Aristotle’s syllable, too, shared the fate of a number of notions repeatedly re-invented by linguists, although, adopted once and for all, it could have found its place among the basic notions of the Science of Language.

37 „Die Sylbe bildet eine Einheit des Lautes; sie wird aber erst zum Worte, wenn sie für sich Bedeutungsamkeit erhält, wozu oft eine Verbindung mehrerer gehört. Es kommt daher in dem Worte allemal eine doppelte Einheit, des Lautes und des Begriffes, zusammen.“

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## APPENDICES

*Appendix I. Aristotle*

A. Poetics XX: 1456b – 1457a (Halliwell 1995: 98 – 101; Butcher 1902: 70–75):

1. (= 19-21): Τῆς δὲ λέξεως ἀπάσης τάδ' ἐστὶ τὰ μέρη, στοιχείον συλλαβῆ σύνδεσμος ὄνομα ῥῆμα ἄρθρον πτώσις λόγος 'The components of all diction are these: element (Butcher: 'letter'), syllable, connective, [noun, verb, inflection (Butcher: 'or Case'), statement (Butcher: sentence or phrase)].
  2. (= 21 – 22): στοιχείον μὲν οὖν ἐστὶν φωνὴ ἀδιαίρετος 'An element is an indivisible sound'.
  3. (= 34 – 36): Συλλαβὴ δὲ ἐστὶν φωνὴ ἄσημος συνθετὴ ἐξ ἀφώνου καὶ φωνῆν ἔχοντος 'A syllable is a non-significant sound composed of a mute and a vowel'.
  4. Σύνδεσμος δὲ ἐστὶν φωνὴ ἄσημος ἢ οὔτε κωλύει οὔτε ποιεῖ φωνῆν μίαν σημαντικὴν ἐκ πλειόνων φωνῶν, πεφυκυῖα [συν]τίθεσθαι καὶ ἐπὶ τῶν ἄκρων καὶ ἐπὶ τοῦ μέσου. <...> ἢ φωνὴ ἄσημος ἢ ἐκ πλειόνων μὲν φωνῶν μίας, σημαντικῶν δὲ, ποιεῖν πέφυκεν μίαν σημαντικὴν φωνήν 'A connective is a non-significant sound, which neither causes nor hinders the union of many sounds into one significant sound (Halliwell: 'semantic utterance'); it may be placed at either end or in the middle of a sentence. <...> Or, a non-significant sound, which out of several sounds, each of them significant, is capable of forming one significant sound'.
- B. De Interpretatione IV (Minio-Paluello 1949: 51):
5. ἀλλ' οὐχ ἡ τοῦ ἀνθρώπου συλλαβὴ μία-οὐδὲ γὰρ ἐν τῷ μῦς τὸ υς σημαντικόν, ἀλλὰ φωνὴ ἐστὶ νῦν μόνον 'If we separate one syllable of the word ἀνθρώπου 'human' from the other, it has no meaning; similarly in the word μῦς 'mouse', the part υς has no meaning in itself, but is merely a sound'.

*Appendix II. Dionysius Thrax (Uhlig 1883: §§ 8, 9, 10; Davidson 1974: 5–7):*

1. συλλαβὴ ἐστὶ κυρίως σύλληψις συμφώνων μετὰ φωνήεντος ἢ φωνήεντων, οἷον Κᾶρ βου̅ς-καταχρηστικῶς δὲ καὶ ἡ ἐξ ἐνός φωνήεντος, οἷον ᾗ, ἦ 'A syllable is properly a combination of a consonant with a vowel or vowels, as Κᾶρ βου̅ς. Improperly we speak of a syllable as composed of a single vowel, ᾗ, ἦ'.
  2. μακραὶ συλλαβαὶ 'long syllables'
- A. φύσει 'by nature':
- (α) ὅτ' ἂν διὰ τῶν μακρῶν στοιχείων ἐκφέρηται, οἷον ἦρω̅ς-when it is represented by the long elements, as ἦρω̅ς;
  - (β) ὅτ' ἂν ἔχη ἐν τι τῶν διχρόνων κατ' ἕκτασιν παραλαμβανόμενον, οἷον Ἄρη̅ς-when one of the doubtful elements is assumed as long, as Ἄρη̅ς;
- B. θέσει 'by convention/by position/institution':
- (α) ὅτ' ἂν εἰς δύο σύμφωνα λήγη, οἷον ἄλ̅ς-when it ends in two consonants, as ἄλ̅ς;
  - (β) ὅτ' ἂν βραχεῖ ἢ βραχυνομένῳ φωνήεντι ἐπιφέρηται δύο σύμφωνα, οἷον ἀγρ̅ός-when a short or shortened vowel is followed by two consonants, as ἀγρ̅ός;
  - (γ) ὅτ' ἂν εἰς ἀπλοῦν σύμφωνον λήγη καὶ τὴν ἐξῆς ἔχη ἀπὸ συμφώνου ἀρχομένην, οἷον ἔργον̅-when it ends in a single consonant and the next syllable begins with a consonant, as ἔργον̅;
  - (δ) ὅτ' ἂν διπλοῦν σύμφωνον ἐπιφέρηται, οἷον ἔξω̅-when it is followed by a double consonant, as ἔξω̅;
  - (ε) ὅτ' ἂν διπλοῦν σύμφωνον λήγη, οἷον Ἄραψ̅-when it ends in a double consonant, as Ἄραψ̅.



**3. βραχέαι συλλαβαί 'short syllables':**

βραχέα συλλαβή γίνεται κατὰ τρόπους δύο 'a syllable becomes short in two ways':

- (α) ἂν ἔχη ἐν τι τῶν φύσει βραχέων, οἷον βρέφος; 'when it contains a vowel naturally short, as βρέφος';
- (β) ἂν ἔχη ἐν τι τῶν διχρόνων κατὰ συστολήν παραλαμβανόμενον, οἷον Ἄρης. 'when it has a doubtful vowel assumed as short, as Ἄρης'.