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Erkenntnisstand zurückbleibt, wenn er den alten Orient nicht ständig in seine Überlegungen einbezieht.

Zusammenfassung: Nach einer Vorbemerkung über die Rolle der Lehnübersetzung auch im Bereich der alltäglichen Sprache werden Beispiele für griechische und lateinische Ausdrücke gegeben, die orientalischen Sprachen (vor allem dem Akkadischen, Hebräisch-Phönizischen und Aramäischen, nur am Rande sind Sumerisch und Hethitisch berücksichtigt, gar nicht Ägyptisch) nachgebildet sind, u. a. aus dem religiösen und politischen Bereich, ausführlicher zu: MOND/MONAT, VORLÄUFER, KÖNIG und andere Titel, HEUTE. Manchmal geht die Entlehnung ins Latein nicht über das Griechische. Einige der genannten Ausdrücke sind über das Mittelalter auch in die modernen Sprachen übergegangen[65].

Phonological Structure of the Syllable in Ancient Greek: A Synchronic and a Diachronic Study[*]

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1. The research related either directly or indirectly to the syllabic structure of ancient Greek, which is in some instances most valuable[1]), proves to be incomplete if that phenomenon itself is to be comprehended, since it is limited to the *description* of facts, the laws or trends regulating the syllabic structure never being expressly formulated or even *interpreted*. It must be admitted that Professor Ruipérez almost touches, in the before-mentioned essay, on the surface of formulation of the determining principle of syllabic structure when he says (p. 147) that "la tendencia a una articulación

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[65]) Die vorliegende Arbeit hat in einer Reihe von Punkten von einer kritischen Stellungnahme des Herausgebers K. Strunk profitiert. Ich bin ihr jedoch nicht in allem gefolgt.

[*]) I show gratitude to Prof. Strunk, of the München University, for his reading of this work, and for his very valuable suggestions. Of course, all the remaining defects are my responsability.

[1]) E. Hermann, *Silbenbildung im Griechischen und in den anderen indogermanischen Sprachen*, Göttingen 1923. Lejeune, *Phonétique historique du grec ancien et du mycénien*, Paris 1972. M. Ruipérez, "Le dialecte mycénien", *Acta Mycenaea*, Salamanca 1972.

relajada" (the trend to a relaxed articulation) generates in turn "la tendencia a hacer sílabas abiertas" (a trend to utter open syllables). Nevertheless, he never expressly states the reason for that trend, nor does he include its effects in a general theory of the syllable, but merely confines it to a number of cases.

2. It is possible, however, to take another step by giving up describing the data and undertaking instead a general interpretation of them, which interpretation, by the way, could never be done but for the previous existence of that very description.

Sure enough, A. Martinet[2]) regards the speaker's and the language's struggle to keep the significant units distinct as opposed to the natural trend to spend as little articulatory energy as possible as the primary cause for linguistic development in general. Now this principle that Martinet applies to language in general can, and must, be likewise applied to syllabic structure in particular. Indeed, the general principle that rules the development of the phonological structure of the Greek syllable is concentrated in the tendency to follow the line of least resistance, i. e. linguistic economy, consisting in the human inclination to reduce energetic spending to the least, and this in such a way that, due to this principle, language, or (what is the same) the speaker, has a tendency to dispense with useless units of articulation, that is, those which prove superfluous, and consequently redundant in the system.

3. In a proper sense the trend to spending as little articulatory energy as possible cannot exceed the ultimate point beyond which the linguistic unit in question would loose its self, for it would be deprived of its constituent parts. Beyond that point linguistic unit concerned would prove useless, since it would bring confusion into the language. In the particular instance of the syllable, its formal development cannot, in principle, exceed the limits of its own self. In other words, a long syllable, for instance, can develop satisfactorily as long as it keeps precisely that length. Should it become short instead, this very change would entail loss of self and therefore confusion. It is the trend to avoid this result that leads us to understand the phenomenon of some inversions, e. g. *labial + s >
s + labial* (thus ἐκάλυπσεν > ἐκάλυσφεν) and *velar + s > s + velar*
(thus εὐκσάμενος > εὐσχάμενος. Indeed, it is for "prophylactic" reasons, to keep up the syllabic rhythm, that those inversions take place, for otherwise there would be a trend to assimilation, which

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[2]) A. Martinet, *Economía de los cambios fonéticos*, trad. española, p. 132.

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in turn would mean simplification, of $\varkappa + \sigma > \sigma$ etc., by, say, $\xi\acute{v}\lambda ov > \sigma\acute{v}\lambda ov$ and $\xi\acute{v}v > \sigma\acute{v}v$[3]). Notwithstanding what has been stated above, some phonological changes did exceed the syllabic limit allowed, sometimes with, sometimes without loss of syllable self, just because either simultaneously or previously the contrasting unit had disappeared. In other words, some long syllables became short but were never mistaken for the originally short, which in turn were still in opposition to the former as having themselves developped to a point that made confusion impossible. The fact of the matter is that in this way the syllables originally long became short, and this "pathological" change, together with other phenomena, eventually brought about the splitting up of the original system, which was founded on opposition in quantity. This system, after falling into disuse altogether in the long run (in the Hellenistic Age), was superseded by a different one based on the agency of stress.

4. The theory expounded above elucidates the following phenomena:

a) There was in the Greek language, in the earliest stage that can be tracked out, opposition in syllabic length. This opposition existed only between *open / closed syllables* containing only short vowels e.g. $*di\text{-}d\breve{e}\partial_3\text{-}mi$ (a short vowel in a closed syllable) / $*di\text{-}d\partial_3\text{-}men$ (a short vowel in an open syllable). This kind of opposition can be taken as the only one because on one hand it was specially meaningful and on the other hand it was based on phonetic-morphological motivations. But the indoeuropean opposition of the $\pi\alpha\tau\acute{\eta}\varrho$ / $\pi\alpha\tau\acute{\epsilon}\varrho\alpha$ and ai. *yákṛt* / avest. *yākarə* types had very small entity and besides that it was based only on morphological reasons[4]). In all, this last is a kind of opposition that has its own rules.

b) The principle consisting in the trend to spending as little articulatory energy as possible brings about in the next stage the disappearance of laryngeals, e.g. $*di\text{-}de\partial_3\text{-}mi > \delta\acute{\iota}\delta\omega\mu\iota$, $\delta\acute{\iota}\delta o\mu\varepsilon v$, etc. This fact involves economy in energy, since it reduces the number of phonemes from two to one without preventing the syllable, in addition, from keeping its length intact. The disappearance of the laryngeal brings about the substitution of the old opposition

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[3]) Lejeune, *Phonétique historique du mycénien et du grec ancien*, Paris 1972, p. 73.

between *open syllable with short vowel | closed syllable with short vowel* for the new opposition, a) *open syllable with short vowel | closed syllable with short vowel* (on certain cases where the old opposition still goes on, as for example on those cases where the fall of laryngeal doesn't take part); b) *open syllable with short vowel | closed syllable with long vowel* (on those cases where the laryngal is followed by more than one consonant); and, c) *open syllable with short vowel | open syllable with long vowel* (this was originated from syllabic situations where the laryngeal was followed by only one consonant).

A system based on syllabic opposition was thus created in which the counterpart of the short open syllable was uneconomical owing to its triple form for a sole function. Finally, in view that language is governed by the law of economy it follows that it will have to choose the most economical of the three variants.

c) Which system of syllabic opposition does the language opt for?

1. It could opt for the former opposition *short open syllable | short vowel in closed syllable*, but this would mean running counter to the trend of Greek to saving energy to the upmost. Furthermore, that would be incompatible with the existence of long open syllables, which was an irreversible fact, these syllables acting like a powerful wedge to obstruct badly the realization of this option.

2. It could opt for the opposition *short open syllable | long vowel in closed syllable*. Now a long vowel in a closed syllable was uneconomical, since it consisted of two different items instead of one, which would have been sufficient to make up a long syllable, namely either a short closed syllable or a long open syllable, not necessarily closed and long concurrently.

3. There only remained the opposition between open syllables: *short open syllable | long open syllable*. To bring this system into play the language eliminates all superfluous items that could possibly prevent it. First of all it dispenses with long closed syllables in two ways, one of them being the shortening of the long vowel in the combination *long vowel + sonant + consonant*, which is known as Osthoff's law. This phenomenon is merely an instance of following the principle of spending as little articulatory energy as possible, or law of economy, which excludes superfluous items.

It could be asked why Osthoff's law operates only before the *sonant + consonant combination* and not before the *consonant +*

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sonant combination e.g. **ōsmos* (from **ōmsos*) or ῥήτρα. This is undoubtedly because *consonant + sonant* would tend to be assimilated and pronounced in the same syllable, unlike what happens in the *sonant + consonant combination*. It follows that in words of the **ōsmos* type there should be no shortening of the *ō-* for "prophylactic" reasons, since it would mean taking the risk of **ōsmos* > **ommos*, that is to say, of reducing *-sm-* to a sole consonant, and ῥήτ-ρα would tend to become ῥή-τρα (should ῥήτ-ρα have become **ῥέτ-ρα*, it would have turned into **ῥέ-τρα* later, thus breaking the syllabic rhythm). Another way is the reduction to a sole consonant in the combination *long vowel + consonant (other than sonant) + consonant*, which in turn responds to the same motive as Osthoff's law, namely economy in articulatory energy. Other cases where is retained *long vowel followed by more than one plosive*, like ληπτός, are explained by analogical reasons, thus ληπτός is analogical to εἴληφα, or λήψομαι. This last form did not become **λέψομαι* because *labial + sibilant* had a trend assimilation, which in turn would mean simplification, and thus **λέψομαι* would become **λέσομαι*, a form contrary to the original syllabic rhythm[4]). Then the language must choose between a long open syllable and a short vowel in a closed syllable (which had the same function), because of the principle of economy governing it. The alternative chosen is the long open syllable, and this for several reasons: firstly, there was already the precedent, in the language, of long open syllables as a result of the evolution of laryngeals; secondly, the opposition *long open syllable | short open syllable* was symmetrical whereas the opposition *short open syllable | short vowel in closed syllable* had an unharmonious nature. In order to make that option of long open syllable possible the Greek language has tended throughout its history to discard consonant clusters which, through assimilation, could end up in gemination or, what would be a step farther, the compensatory lengthening of a previous short vowel. Both phenomena correspond to the principle of economy. Additionally, there is a difference: the economy in energy is augmented by simplifying geminated consonants by compensatory lengthening. This accounts for the loss of implosion in medial position in a word, which can concur with a loss of implosion in final position. This is shown in the Pamphy-

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[4]) Cf. P. Chantraine, *Morphologie historique du grec*, Paris 1973, p. 4, and Lejeune, *Phonétique historique du mycénien et du grec ancien*, Paris 1972, p. 200.

lian dialect by the disappearance of ν both in closed medial syllable
(e.g. πέντε > πέδε and final syllable (e.g. πύργο ἀργύρυ)[5]).

In a like manner the geminated consonants were simplified (e.g.
γλῶττα > γλῶτα) and did final -ν disappear during the development
of ancient into modern Greek (e.g. φίλον > φίλο). We can conse-
quently be led to assume that if the implosion is retained in medial
position (as it is the case in Mycenaean) it should likewise be re-
tained in final position. It could even be assumed that the dis-
appearance of final plosives might have taken place after the assimi-
lation of *plosives* + *sonant* in word medial position, and, doubtlessly,
much later than assimilation should occur. Incidentally, the fact
that assimilation should not have come about yet in Mycenaean
at the time is consistent with the retention of uncontracted hia-
tuses, which implies that there was no assimilation between the
vowels in contact with each other, assimilation being the ground
for contraction, which in turn is in Mycenaean a phenomenon simi-
lar to its lack of assimilation of plosives. This thesis is based upon
the following argument: the Greek language has always earnestly
and ardourously retained its traditional syllabic rhythm, the ten-
dency has been neglected in later periods, to a certain degree in the
Hellenistic epoch and more so in the Roman one. Now if we take
it for granted that assimilation of *plosives* + *sonant* in word medial
position causes the language to retain its syllabic rhythm whereas
the disappearence of final plosives often alters it, we could assume
that these two linguistic phenomena, whose results are at times
qualitatively different, might have taken place in different epochs,
the disappearance of final plosives occurring later and this owing
to the similarity to the late phenomenon of the alteration of syllabic
rhythm. Anyway, granted that the Greek language should have
earnestly and ardourously retained its traditional syllabic rhythm
before the Hellenistic epoch, the question arises why it should alter
that rhythm with the disappearance of plosives when these were
not preceded by consonants (e.g. *μέλιτ, *ἔφερετ). There are several
reasons: I. the tendency to the least expenditure of energy; II. final
plosives, as well as -m, had become weaker by that time as their
phonological structure had been reduced to implosion (this in turn
being due to the fact that plosion had died out). Notwithstanding
both factors the syllabic rhythm ought, according to the trends of
Greek phonetics, to have been kept up. In other words, final plosives

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[5]) C. Brixhe, *Le dialecte grec de Pamphylie*, Paris 1976, pp. 64—65.

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should have been retained in those and similar circumstances if we
take into consideration that Greek, although it tended to saving
energy to the upmost, did so without ever risking the qualitative
identity of the syllable. Under these circumstances the disappea-
rance of final plosives when they were not preceded by a consonant
or a long vowel constitutes a "pathological" case outside the rules
and trends of the Greek language. That is why we believe that, as
long as the ordinary rules of this language should not provide a
good reason for that, only analogy can account for it. We believe
that it was the plosive preceded by a closed syllable or long vowel
that disappeared first, in such a way that *ἐφάνητ and *Ϝοίκωδ,
for instance, became ἔφανεν and οἴκω respectively[6]). In fact, the
Latin confirms this assumption. This perfectly suits both the rules
and trends of the Greek language since the language in this way
saves articulatory energy to the upmost, and, on the other hand,
retains the syllabic rhythm. Later on final plosives, even those
preceded by short vowels, must have disappeared by analogy with
the final plosives preceded by long vowels.

d) The disappearance of final plosives was one of the factors that
opened the process of alteration of syllabic rhythm, yet it was not
the only one. The double treatment of vowel liquid sonants and
the final reduction to zero of the group -sy- between vowels, to-
gether with the above-mentioned treatment of final plosives pre-
ceded by a short vowel (all of which may be simultaneous pheno-
mena) initiated such a decisive fact in the history of Greek phono-
logy as the replacement of a syllabic rhythm based on the opposi-
tion in length by another one based on stress. Consequently the
double treatment ϑάρσος and ϑράσος must have been the starting
point for the speaker's linguistic consciousness to establish the
syllabic equation ϑάρσος = ϑράσος, and, seeing that the tendency
in Greek was saving energy to the upmost, it was the most econo-
mical form that prevailed in that equivalence in the end, namely
the ϑράσος type. The proposition is exact-: if ϑάρσος can be super-
seded by ϑράσος, it follows that *φάρ-Ϝος in Attic will be equally
superseded by φᾶρος ("fabric"), *κορ-Ϝη by κόρη and *καλ-Ϝός by
κᾰλός. What made this was the fact, that in both cases (influential
and influenced) the syllable should end in a liquid (e.g. ϑάρ-σος
and *καλ-Ϝός). Furthermore, if ϑάρ-σος was equal to ϑράσος, *καλ-Ϝός
could be interpreted as being equal to κᾰλός and from this, by analo-

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[6]) Niedermann, *Phonétique historique du latin*, Paris 1953, pp. 90–92.

gy, the phenomenon must have developped into δέ-δια< *δέδ-Ϝ- (from δϜ- root basis) and into the sequence "muta cum liquida". However, Attic underwent the following development: *φϑέρ-yω > *φϑέρ'ρ'ω > φϑείρω (and not *φϑέρω). This particular development took place in Attic because it was prior to the development of vowel sonants. In fact, in Mycenaean ṛ did not undergo such change[7]) whereas -y- had virtually disappeared.

In like manner the *logos-yo type altered the syllabic rhythm in λόγοο (a kind of forms retrieved by Homeric metre), and, ending up as λόγου in Ionic-Attic through the process *logos-yo > *logohyo > *logoyyo > λόγοιο (when simple -y- had disappeared), finally dropping -y- between vowels, presumably by analogy with unstressed forms[8]). In short, this development also brought about a change in rhythm in such a way that a syllable originally long became short. This phenomenon undoubtedly gave rise to others of the same sort, such as ποιέω >ποέω; ποία > πόα and ὠκεῖα > ὠκέα in Attic, owing, according to Lejeune[9]), to rapid speech, which is in turn the result of the tendency to save articulatory energy. Now the treatment in Attic, too, of the group "muta cum liquida" is a similar phenomenon: it also ends in the alteration of the syllabic rhythm through a process similar to that undergone by other consonant groups, for in both cases the closed syllable has a tendency to open by adjusting the first consonant to the second one. As to the origin of the type ποέω and πόα etc. it is most probably popular. Sure enough, the phenomenon called "muta cum liquida" being common in Aristophanes, we can be led to believe that it has a popular origin as well[10]). So that in both cases it is a question of economy in articulatory energy.

e) As we have seen, all the Greek dialects underwent some degree of alteration of the originary system of syllabic rhythm based on the opposition of short syllables to long syllables, some of the long ones becoming short, for those dialects were all affected by, say, the disappearance of final plosives. As it can be observed, it is Attic, of all dialects, that has gone further in the process of alteration of the syllabic rhythm, for it is the only dialect acquainted with the *καλ-Ϝός > κάλός, ποία > πόα and the "muta cum liquida"

[7]) Heubeck, "Syllabic ṛ in Mycenaean Greek?" *Acta Mycenaea* II, Salamanca 1972.

[8]) A. López Eire, *Tres cuestiones de dialectología griega*, Salamanca 1969. Ruipérez, in op. cit.

[9]) Op. cit. p. 246.   [10]) Cf. Allen, *Vox Graeca*, p. 102.

types. There is one case belonging to the same type in which Attic shares with Ionic and Arcadian the same phenomenon: the simplification of -*ss*- into -*s*-, and this even when it is followed by a short vowel, e.g. ὄσσος, which is ὄσος in Ionic-Attic and Arcadian. The latter was another factor altering the structure of the syllabic system, since the simplification of -*ss*- > -*s*- after a long vowel (a phenomenon not uncommon in other dialects) fitted perfectly in that system because it did not only amount to economy in energy but helped to retain the syllabic rhythm. Still, the simplification after a short vowel altered that rhythm. This fact in Attic must be parallel to the κᾰλός, πόα and "muta cum liquida" type: originally the two consonants in contact belonging to different syllables, the first undergoing a certain degree of adaptation to the second one later (which is usual and ordinary in all consonant groups), and, lastly, Attic adapted that consonant in such a way that it eventually shifted from final position in a syllable to functioning as an initial consonant to the following syllable; which in turn connoted simplification. Consequently, it was Attic that was ahead in that process of alteration, nay, that caused alteration to such an extent that deeply affected the syllabic rhythm. In view that Attic is the basis of Koine[11]) we may infer that the utter ruination of the former system (based on the opposition in syllabic quantity) which started in the Hellenistic epoch, was caused by Attic, since the Attic was a predominant element in the constitution of Koine. Indeed, by the Hellenistic time the Attic dialect had already altered it slowly but perceptibly, and this to such an extent that the ruination of that system by the Hellenistic and Roman time was the climax of the natural process once started by Attic.

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[11]) Cf. A. Meillet, *Aperçu d'une histoire de la langue grecque*, p. 251.