

1 The problem of long-vowel endingless nominative singular forms *

It is a well-established fact that the individual Indo-European languages unambiguously indicate that in Proto-Indo-European (PIE) the nominative singular form of many masculine or feminine stems such as *r*-, *n*- or *s*-stems was characterised by a long vowel in the stem-formative or root and had no additional case ending. The following table (1) lists a few examples of such forms (cf. Kümmel 2015 for additional evidence).

Table (1): Long-vowel endingless nominatives

stem-type	individual languages	PIE
<i>r</i> -stems	NOM.SG.M. Gk πατήρ, Ved <i>pitā́</i> , Lat <i>pater</i> , Goth <i>fadar</i>	*ph ₂ tér ‘father’
	ACC.SG. Gk πατέρα, Ved <i>pitāram</i>	*ph ₂ tér-ṃ
	NOM.SG.M. Gk δῶτωρ, Ved <i>dātā́</i>	*déh ₃ tōr ‘giver’
	ACC.SG. Gk δώτορα, ¹ Ved <i>dātāram</i>	*déh ₃ tor-ṃ
<i>n</i> -stems	NOM.SG.M. Gk ἄκμων, Ved <i>ásmā́</i> (cf. Lith <i>ásmuō/akmuō</i>)	*h ₂ ékmōn ‘stone’
	ACC.SG. Gk ἄκμονα, Ved <i>ásmānam</i>	*h ₂ ékmōn-ṃ
	NOM.SG.M. Gk κύων, Ved <i>ś(u)vā́</i> , Lith <i>šuō</i> , OIr <i>cú</i>	*k _u ōn ² ‘dog’
	ACC.SG. Ved <i>śvānam</i> , Hitt <i>ku-ya-na-an /k(u)uānan/</i>	*k _u ōn-ṃ ³
	ACC.PL. Ved <i>śúnah</i> , Gk κύνας	*kúnṃs

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¹ Attested rather late (cf. Erbse 1969: 199, IOSPE I² 436.4), but probably inherited.

² For reasons of space and clarity, PIE monosyllables like *k_uōn, *d_iéus ‘sky, heaven’ are generally not given in their bisyllabic Sievers/Lindeman variant here, but this may easily be inferred from the corresponding non-Sievers/Lindeman form.

³ Apart from the expected full-grade ACC.SG.M. *k_uōnṃ implied by Ved *śvānam* and Hitt *ku-ya-na-an /k(u)uānan/* we have to reconstruct an alternative zero-grade form *k_uōn continued in Gk κύων, Lith *šunį*. This is also implied by the ACC.PL. *k_uōnṃs reflected in Ved *śúnah*, Gk κύνας and NOM.PL. *k_uōnes reflected in Gk κύνες and OLith *szúnes* (Daukša). I cannot tell which of the forms is the more original one, as both allow for an analogical explanation. In light of the reflexes of *k_uōnṃ in Anatolian as well as Indo-Iranian I tentatively consider that this form is the more original one. The ACC.SG. found in Greek and Baltic might have followed the plural.

<i>s</i> -stems	NOM.SG.M./F. Gk εὐμενής, Ved <i>sumánāḥ</i>	*h ₁ suménēs ‘favourable’
	NOM./ACC.SG.N. Gk εὐμενέζ	*h ₁ suménes
<i>i</i> -stems	NOM.SG.M. Ved <i>sákhā</i> , YAv <i>haxa</i>	*sók ^u h ₂ ō ₁ ‘companion’
	ACC.SG. Ved <i>sákhāyam</i> , Av °- <i>haxāim</i>	*sók ^u h ₂ ō ₁ -m
root nouns	NOM.SG.M. Gk φῦρ, Lat <i>fūr</i>	*b ^h ōr ‘thief’
	NOM.SG.M. Gk ἀνὴρ, Av <i>nā</i> , Osc niir , Arm <i>ayr</i>	*h ₂ nér ‘man’
	ACC.SG. Hom ἀνέροα, Ved <i>náram</i>	*h ₂ nér-m

By the example of relations such as ACC.SG.M. *h₂nér-m ~ NOM. *h₂nér, ACC.SG.M. *ph₂tér-m ~ NOM. *ph₂tér or ACC.SG.M. *h₂ékmōn-m ~ NOM. *h₂ékmōn it becomes clear that, while the accusative forms of some masculine or feminine nouns must be considered to have been characterised by a short vowel in the stem-formative or root preceding the case-ending *-m* in PIE, their corresponding nominative forms were endingless and had a stem-formative or root with a long vowel. This is rather unexpected given the fact that masculine or feminine nominative singular forms of other stems were usually characterised by the case-ending *-s*; cf. table (2).

Table (2): Nominatives characterised by the formative *-s*

stem-type	individual languages	PIE
root nouns	NOM.SG.F. Av <i>vāxš</i> , Lat <i>vōx</i>	*uók ^u -s ‘voice’
	ACC.SG. Gk ὄπα, Ved <i>vācam</i>	*uók ^u -m
	NOM.SG.M. Ved <i>pāt</i> , Dor (Hes.) πῶς	*pód-s ‘foot’
	ACC.SG. Gk πόδα, Ved <i>pādam</i>	*pód-m
	cf. NOM.SG.M. Ved <i>nápāt</i> , Av <i>napās</i> ² (in sandhi), Lat <i>nepōs</i>	*népōt-s ‘grandson’
<i>i</i> -stems	NOM.SG.F. Gk βᾶσις, Ved <i>gátiḥ</i> (TS, VS), Goth <i>ga-qumþs</i> * ‘coming’	*g ^u ṛti-s ⁴ ‘step’
	ACC.SG. Gk βᾶσιν, Ved <i>gátim</i>	*g ^u ṛti-m

⁴ Due to the exact match between Gk βᾶσις and Vedic *gátiḥ* as well as the rather unambiguous consonantism of Goth *ga-qumþs** which excludes oxytonesis, it seems necessary to me to reconstruct *g^uṛtis with barytonesis (cf. already Brugman[n] 1976: 326, fn. 43, Bammesberger 1990: 141). The deviance from the well-known oxytone pattern of other *i*-stems (cf. NOM.SG.F. Ved *matīḥ*, Lith *mintis*, Lat *mēns* < PIE *mṛtis ‘thought’) is most probably owed to a secondary decomposition of the

<i>u</i> -stems	NOM.SG.M. Gk $\pi\tilde{\eta}\chi\upsilon\varsigma$, Ved <i>bāhúh</i> (TS, VS), ON <i>bógr</i> ‘shoulder’	*b ^h eh ₂ ĝ ^h ú-s ‘arm’
	ACC.SG. Gk $\pi\tilde{\eta}\chi\upsilon\nu$, Ved <i>bāhúm</i> (TS)	*b ^h eh ₂ ĝ ^h ú-m
	NOM.SG.M./F. Gk $\beta\alpha\rho\upsilon\varsigma$, Ved <i>gurúh</i>	*ĝ ^h rHú-s ‘heavy’
	NOM./ACC.SG.N. Gk $\beta\alpha\rho\acute{\upsilon}$, Ved <i>gurú</i>	*ĝ ^h rHú
thematic stems	NOM.SG.M. Ved <i>vṛkaḥ</i> , Lith <i>vil̃kas</i> , Goth <i>wulfs</i>	*uḷk ^u o-s ‘wolf’
	ACC.SG. Ved <i>vṛkam</i> , Goth <i>wulf</i> , Lith <i>vil̃kq</i> , OCS <i>vlbkb</i>	*uḷk ^u o-m

Forms such as NOM.SG. *uḷk^uo-s, *b^heh₂ĝ^hú-s on the one side and *pód-s, *uḷk^u-s on the other illustrate unambiguously that, in the stage of PIE we can access through the comparison of the individual Indo-European languages, the nominative singular of masculine or feminine nouns different from the ones presented in table (1) had a case-formative -s. Based on how they formed the masculine or feminine nominative singular, we must therefore differentiate three types of nouns in PIE (not taking into account derivative *eh*₂- or *ih*₂-stems): (1) one type forming it with a case-ending -s having a short vowel in the root or stem-formative such as *b^heh₂ĝ^hú-s, *uḷk^uo-s, (2) one type forming it with a case-ending -s and having a long vowel in the root or stem-formative such as *pód-s, *népōt-s and (3) one type forming it without a case-ending and with a long vowel in the stem-formative or root such as *ph₂tér, *h₂nér.

In order to account for this variation in forming the NOM.SG.M./F., researchers have – in one form or another – sought to provide a uniform explanation of the three types. The most prominently advocated explanation today is that of O. Szemerényi who formulated a well-known sound law named after him by which the variation should become explainable; but there are some serious alternatives to Szemerényi’s Law advocated by some scholars, e. g. one advocated by J. E. Rasmussen and another by R. S. P. Beekes and F. H. H. Kortlandt.

word in PIE times. The individual languages show that the stem *ĝ^hmti- mainly occurred in compounds with barytonesis (cf. Hom $\tilde{\epsilon}\kappa\text{-}\beta\alpha\sigma\iota\varsigma$, $\pi\rho\acute{o}\text{-}\beta\alpha\sigma\iota\varsigma$, $\tilde{\alpha}\mu\phi\acute{\iota}\text{-}\beta\alpha\sigma\iota\varsigma$, Ved *sám-gati-*, *ā-gati-*, Goth *ga-qumþs**) so that it seems natural to assume that in PIE times it became decomposed from a more original compound and, since it would otherwise have been unaccented, received a standard accent on the initial syllable (just like vocatives did in sentence-initial position).

The present article seeks to demonstrate that the theories presented by scholars so far are insufficient to account for the variation in forming the NOM.SG.M./F., and that this variation calls for a better, more comprehensive explanation which this article strives to provide. Following this introduction, section 2 and 3 will be dedicated to a discussion of the theories advocated by researchers so far, while section 4 will present a new account. In section 2 Szemerényi's Law will be discussed, and it will be shown where its numerous weaknesses lie and why it should be abandoned in favour of a more consistent and coherent account. Similarly, in section 3 Rasmussen's (section 3.1) as well as Beekes's and Kortlandt's (section 3.2) theories will be discussed, and it will be demonstrated why due to their weaknesses and deficiencies they should also be abandoned in favour of a better theory.

Such a theory will be presented in section 4. It will be argued that the NOM.SG.M./F. forms can be connected with other morphological formations such as the ACC.PL.M. of thematic nouns like **uiHróns* 'man' (> Ved *vīrán*, Lith *výrus*, Lat *virōs*, Goth *waírans*, OIr *fíru*) and together with them allow for a coherent and consistent uniform explanation based on the operation of three regular sound changes and simple proportional analogy in the prehistory of the Indo-European languages. The three sound changes proposed here to have operated and determined the morphological developments leading to the specific NOM.SG.M./F., thematic ACC.PL.M. and other forms are the following ones: (1) lengthening of short vowels preceding two word-final dentals, (2) simplification of geminate **ss* to **s* in word-final position, (3) loss of word-final **-s* after **r*. After a discussion of the chronology and morphological consequences of the interplay of these sound changes and proportional analogy, the individual sound changes are taken into consideration in more detail. Due to its integral importance for the theory advocated here, a detailed discussion will be dedicated to evidence in favour of and counter-evidence contradicting lengthening before two word-final dentals in section 4.1, where it will be demonstrated that all counter-evidence can faithfully be regarded as secondary. Section 4.2 will see the treatment of reduction of **-ss* to **-s* and loss of **-s* after **r*. Here, it will be made probable that in spite of little evidence both developments took place in PIE as regular sound changes. While the chronological position of de-gemination of **ss* will be shown to remain unclear, it will be argued that loss of **-s* after **r*

probably took place after the split-off of the Anatolian branch from rest-Indo-European, and that it thus constitutes an isogloss between Anatolian and the rest of the Indo-European language family. In this regard the theory presented in this article provides evidence in favour of the notion widely held, but until now only insufficiently substantiated that the Anatolian branch was the first to split off, and that all the other branches share a common prehistory and stem from a later stage of the Indo-European proto-language post-dating the Anatolian split-off. Finally, the findings of this investigation will be summarised in the concluding section 5.

2 Szemerényi's Law

Patterns such as ACC.SG.M. $*b^he_2\hat{g}^h\acute{u}-m$ ~ NOM. $*b^he_2\hat{g}^h\acute{u}-s$ and the like with accusative forms displaying a short vowel in the stem-formative before the case-ending $-m$ indicate that the inflexion of nouns with a case-ending in the NOM.SG. was structurally very close to the inflexion of nouns without a case-ending in the NOM.SG. as instantiated by paradigmatic patterns like ACC.SG.M. $*ph_2tér-m$ ~ NOM. $*ph_2tér$ or ACC.SG.M. $*h_2nér-m$ ~ NOM. $*h_2nér$ which also display accusative forms with a short-vowel stem-formative or root preceding the case-ending $-m$. The structural similarity of the nominal formations is especially demonstrated by the relation between the neuter nominative or accusative singular of athematic adjectives and their corresponding masculine or feminine nominatives such as NOM/ACC.SG.N. $*g^u_rHú-\emptyset$ ~ NOM.SG.M./F. $*g^u_rHú-s$ as against NOM/ACC.SG.N. $*h_1suménēs-\emptyset$ ~ NOM.SG.M./F. $*h_1suménēs$. The neuter NOM/ACC.SG. of both types is obviously characterised by a short-vowel stem-formative and lacks a case-ending as illustrated by $*g^u_rH-ú-\emptyset$ and $*h_1sumén-es-\emptyset$. The only difference here lies in the formation of the corresponding masculine/feminine nominative singular: while this form is (a) characterised by a long-vowel stem-formative and the lack of a case-ending in adjectives of the latter type, as illustrated by $*h_1suménēs$, (b) it has a short-vowel stem-formative and a case-ending $-s$ in adjectives of the former type, as found in $*g^u_rHú-s$, i. e. in these adjectives it differs from the corresponding NOM/ACC.SG.N. only through the additional $-s$.

Due to this structural, paradigmatic similarity of nouns with a long-vowel endingless NOM.SG. and nouns with a short-vowel NOM.SG. with an ending it can rather faithfully be assumed that, at some point in a stage of PIE prior to the one we can reconstruct on the basis of the findings provided by the individual Indo-European languages, the forms which later surfaced as long-vowel endingless nominatives like $*ph_2tér$, $*h_2nér$ were originally also characterised by the case-ending $*-s$ and a short-vowel root or stem-formative, just as e. g. forms like $*b^heh_2ǵ^hú-s$ had such a short-vowel stem-formative and case-ending; i. e. it seems reasonable to assume that word-forms like $*ph_2tér$, $*h_2nér$ originated in older forms like $*ph_2tér-s$, $*h_2nér-s$ (cf. already Bopp 1857: 300, Schleicher 1861: I 10, II 425–427, Brugman[n] 1871: 127 with fn. 52). The absence of this case-ending and presence of the long vowel in forms like $*ph_2tér$, $*h_2nér$ can then be interpreted as the result of a secondary development having taken place in earlier stages of PIE.

It is for this reason that researchers have put forward the idea that the absence of the nominative $-s$ and the presence of the long vowel in the stem-formative or root might somehow be connected and that the development $*ph_2tér < *ph_2tér-s$, $*h_2nér < *h_2nér-s$, which on a more general scale represents a development having affected all nouns of the type listed in table (1), might reflect some sort of sound change. Such a sound law would have a great explanatory potential, because it could enable us to genetically connect the NOM.SG.M./F. forms of the type $*b^heh_2ǵ^hú-s$ with the NOM.SG.M./F. forms of the type $*ph_2tér$ so that both could be derived from one original type of NOM.SG.M./F. form with a short vowel in the root or stem-formative and a case-ending $*-s$. This would only leave unexplained the NOM.SG.M./F. forms of the type $*pód-s$ with a long vowel in the root or stem-formative and the case-ending $*-s$. If the long vowel in these forms could regularly be derived from a short vowel, they could also be regarded as continuing an original type of NOM.SG.M./F. forms with a short vowel in the root or stem-formative and the case-ending $*-s$. This would have the consequence that all the three types of NOM.SG.M./F. forms which we can reconstruct on the basis of the individual languages could eventually be derived from a single original one.

2.1 Introduction to Szemerényi's Law

The most prominent advocate of the idea that forms like $*ph_2tér$, $*h_2nér$ derive from earlier forms like $*ph_2tér-s$, $*h_2nér-s$ via a regular sound law was the famous Indo-Europeanist O. Szemerényi (1956, 1962, 1970 and 1990, cf. also 1996: 113–118) who suggested that (a) in a more original $*ph_2tér$ s and similar word-forms the case-ending $*-s$ was assimilated to the preceding resonant leading to $*ph_2tér$ r with a final geminate of that resonant, and (b) that such a geminate was in turn reduced to one resonant with compensatory lengthening of the preceding vowel (cf. typologically the well-known Latin *littera/lītera*-rule), thus yielding $*ph_2tér$ and similar forms which we can reconstruct on the basis of the individual languages. Consequently, we would have to presuppose a development like $*ph_2tér$ s > $*ph_2tér$ r > $*ph_2tér$, $*h_2nér$ s > $*h_2nér$ r > $*h_2nér$, $*h_2ékmons$ > $*h_2ékmonn$ > $*h_2ékmon$, $*h_1sumén$ ess > $*h_1sumén$ ēs (in *s*-stems the geminate was, of course, original and not the result of an assimilation process) and the like. In short, this development can be formalised as a sound law of the following form: PIE $*\tilde{V}Rs\#$ > $*\tilde{V}RR\#$ > $*\tilde{V}R\#$, where V designates vowels and R designates resonants, meaning that in PIE word-final $*-s$ was lost following a resonant, which resulted in the lengthening of a short vowel preceding that resonant. In spite of fundamentally opposing views and criticism (cf. already Kortlandt 1975: 84–86, Beekes 1985: 151–154, Griepentrog 1995: 177f., Keydana 2014) this sound law, which in honour of Szemerényi is often named Szemerényi's Law, has found wide acclaim in the field in one form or another (cf. most recently i. a. Kümmel 2015, Piwowarczyk 2015 with lit., Keydana 2014 with lit., Villanueva Svensson 2011: 6f., Lipp 2009: 93–100, Kim 2001, Mottausch 2000: 30f., earlier Jasanoff 1997: 120, Nussbaum 1986: 129f., Schindler 1973: 153f.) and is featured in many handbooks (cf. Weiss 2009: 46f. with fn. 15, Fortson 2010: 70, 116, Lundqvist & Yates 2018: 2083). It should, however, not go unnoticed that the reception of Szemerényi's Law is by far not uniform, i. e. that those researchers who essentially accept it are in disagreement about the details of its formulation (cf. Piwowarczyk 2015 and Keydana 2014 with lit. on the diverse formulations of Szemerényi's Law): while some researchers follow Szemerényi in thinking that it applied to short vowels before all resonants

(*m, *n, *l, *r, *i, *u) including *s and laryngeals followed by the nominative -s or a laryngeal (cf. Lipp 2009: 93–100, Mottausch 2000), some restrict it to the core resonants (*m, *n, *l, *r) followed by *-s or a laryngeal and exclude the semi-vowels *i and *u (cf. Piwowarczyk 2015), so that the NOM.SG. of all those nouns not covered by a particular formulation of the law must be considered secondary. Some even extend the scope of the law beyond the resonants, laryngeals or *s (cf. Schindler 1973: 153f. on a sequence of a semi-vowel and a nasal, Kim 2001 includes word-final *d) or even beyond the word-end so that it is conceptualised as operating word-medially as well (cf. Byrd 2015: 20f.).⁵ The reason for this overabundance of formulations of the law is the apparent fact that it cannot really account for the actual evidence provided by the individual Indo-European languages. The following discussion will briefly outline the problems of the law and show why it should not be maintained.

2.2 Problems of Szemerényi's Law

Our investigation of Szemerényi's Law must begin with a clarification, namely that it is not actually one sound law, but two: it comprises (a) one mechanism of complete progressive assimilation of the second of two post-vocalic word-final consonants – usually regarded as resonants – so that this becomes identical with the consonant preceding it and both form a geminate, and (b) one mechanism of reduction of word-final geminates with compensatory lengthening as exemplarily shown by the alleged development *ph₂térs > *ph₂térr > *ph₂tér. Since in a Neogrammarian sense sound laws are abstract, but generalising formulations of sound changes – i. e. generalising mappings or representations visualising historical processes pertaining to sounds of speech –, they must obey fundamental principles of rationality such as the principle of parsimony, of non-contradiction and of the excluded third in order to be non-arbitrary and rationally accessible. This

⁵ I restrict my examination to the resonants, semi-vowels and *s and refrain from discussing the role supposedly played by laryngeals – namely *h₂ (especially in neuter forms, cf. Nussbaum 1986: 129f.) – in the context of Szemerényi's Law, since they can have behaved differently (on the neuter forms cf. Kümmel 2015: 281 fn. 1, Tichy 1993, Rasmussen 1999: 20).

means that they must be fully determined in the sense that without any irresolvable contradiction they give (a) only and all of the sounds which are affected by the sound change they formalise and (b) only and all of the conditions under which the sound change they formalise must be regarded to have taken place; otherwise, they would be arbitrary and therefore devoid of any explanatory potential. The all too general, underdetermined claim that Szemerényi's Law somehow affected groups of word-final resonants without specification of the exact sounds which it affected is therefore methodologically unsound; it must rather be determined (a) if assimilation of two word-final consonants and reduction of word-final geminates with compensatory lengthening happened at all, and (b) if so, which consonants specifically were affected by the two processes. It is for this reason that the two-element nature of the law demands that it be supported by evidence which secures both the complete assimilation of word-final consonants and the de-gemination of word-final geminates with compensatory lengthening independently. This holds especially true for the assimilation of word-final consonants to geminates, as the subsequent simplification of word-final geminates with compensatory lengthening essentially depends on it in almost all relevant cases. Therefore, the two integral questions we have to ask in this context are: (1) Was a group of two word-final consonants preceded by a vowel assimilated in such a fashion that the second consonant became identical with the first consonant and both thus formed a geminate, and if so which were the consonant groups affected by this development? (2) Was one element of a word-final group of two identical consonants forming a geminate deleted in such a fashion that the vowel preceding the geminate was lengthened, and if so which geminates were affected by this development?

The answers to the questions will, of course, have to be determined on the basis of the relevant evidence provided by the individual languages. A word-form in the relevant contexts can either be (1) positive evidence in support of Szemerényi's Law or (2) counter-evidence contradicting Szemerényi's Law. It is positive evidence if (a) it shows one word-final consonant preceded by a long vowel, but is on the basis of comparative findings and systemic reasons expected to have had a short vowel followed by two consonants originally, and if (b) applying the mechanisms of

Szemerényi's Law to this form expected to be its original predecessor directly and without the need to make further assumptions results in the form with one word-final consonant preceded by a long vowel. A word-form is counter-evidence if (a) it shows a word-final sequence of two consonants preceded by a vowel – be it long or short –, and if (b) this sequence cannot be assumed without further assumptions apart from Szemerényi's Law to have come into being secondarily, i. e. under conditions in which Szemerényi's Law had no effectuality. Positive and counter-evidence can both either be (a) decisive or (b) inconclusive. Evidence is decisive if due to a lack of serious alternative explanations it necessitates to assume that Szemerényi's Law either operated in the relevant context or that it did not. Decisive evidence is conclusive in the sense that it can essentially prove with regard to a specific context that Szemerényi's Law is real or that it is not. Evidence is inconclusive if it does not necessitate to assume that Szemerényi's Law either operated or did not operate in the relevant context, but is still compatible with Szemerényi's Law in the sense that with or without further well-substantiated assumptions it can, but need not find an explanation within the theoretical framework of the law. Well-substantiated assumptions include analogy, because this is based on structural and systemic matches,⁶ and other assumptions which find detectable independent support in other concrete findings. I do not consider *ad hoc* assumptions without any such independent support well-substantiated. Inconclusive evidence cannot prove or disprove anything, but with every further

⁶ Note that I employ the term *analogy* here in a strictly Neogrammarian and Aristotelian sense (cf. on this Fries fthc.: fn. 30); analogy is proportion: τὸ δὲ ἀνάλογον λέγω, ὅταν ὁμοίως ἔχῃ τὸ δεύτερον πρὸς τὸ πρῶτον καὶ τὸ τέταρτον πρὸς τὸ τρίτον – “I call it analogous, when the second relates to the first in the same way as the fourth relates to the third.” (Arist. Po. 1457b, on the Aristotelian concept of analogy cf. Fiedler 1978). This is the sense of *proportio* in Latin grammar as illustrated by its use in book X of Varro Ling. and Quint. Inst. 1.6.4ff. (cf. Fehling 1956: esp. 261ff., Schironi 2007 in general, Garcea 2008 on Varro, Ax 2011: 233ff. on Quintilian). In the context of historical morphology the proportional character of analogy means that a word-form *a* can be considered an analogical formation only if it has been newly created to another word-form *b* after a proportion, i. e. a reciprocal relation, by which two other different word-forms *c* and *d* were characterised beforehand. Only in this sense does the concept of analogy possess a non-arbitrary explanatory potential (cf. already Osthoff 1879, Brugmann 1885: 75ff., Paul 1920: *passim*, more recently Hill 2007 and 2020a).