A Typological Parallel between Latin and Old Church Slavic

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1. THE PARADIGM OF THE LATIN COPULA

The establishment of the class of root athematic verbs in Proto-Indo-European is one of the undoubted results achieved by the application of the comparative method. Representative of this inflectional type is the verb *es- "be", which shows the full grade of the root in the singular and the zero grade in the plural:

	PIE	Skt.	Lat.
sg. 1	*ésmi	ásmi	sum
2	*és(s)i	ási	es
3	*ésti	ásti	est
pl. 1	*smés, *smós	smás	sumus
2	*sté	sthá	estis
3	*sénti, *sónti	sánti	sunt

The original Ablaut pattern with the accented root in the singular and the accented ending in the plural is faithfully retained in Sanskrit. Latin forms, however, cannot be straightforwardly accounted for from a phonological point of view. The essential difficulties in deriving the paradigm of Latin *sum* from its IE ancestor are summarized as follows:

1. the element *u* found after the root in the 1 sg. and 1 pl.[1]
2. zero grade of the root in the 1 sg.
3. full grade of the root in the 2 pl.

As regards the first point, Buck (1933: 273) claims that the *u* (< *o) of *sum* (< *som) and *sumus* (< *somos) is attributed to the 3 pl. form *sunt* (< *sonti). This analogical explanation is, however, far from satisfactory because it is not easy to understand why *o was extended only to the first person forms, not to the whole paradigm.

Both the second and the third problems reject any phonological solutions, thus explanations, if any, being probably given from a morphological viewpoint. For the third problem, Buck, *op. cit.*, assumes that the full grade vocalism of the root in the 2 pl. *estis* (< *es-te-s) is carried over from the singular. Here again, however, it is totally uncertain why full grade was not generalized throughout the

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paradigm. Watkins (1969 : 32ff.), on the other hand, suggests that the full grade was originally proper to the 2 pl. as well as the singular and that the apophonic pattern of Lat. *sumus, estis, sunt* represents a striking archaism in this repect. Promising as his argument is, the Hittite evidence to which he has attached enormous weight remains to be more exhaustively examined.

Of course, it is not my intention here to offer absolutely convincing solutions to these thorny problems observed in the paradigm of the Latin copula[2]. As for the *u* ($< *o$) found before the first person singular and plural endings, however, I would like to argue that it is best regarded as a thematic vowel inserted partially inside the paradigm[3]. This explanation would be completely *ad hoc* if powerful support is not gained from anywhere. But an exactly parallel phenomenon is observed in a different Indo-European language. This language is Old Church Slavic (OCS) ; the verbal category in question is the sigmatic aorist. Before we directly proceed to the important forms in OCS, however, the original inflectional pattern of the *s*-aorist in the parent language must be seriously entertained.

2. INDO-EUROPEAN SIGMATIC AORIST

It is well known that a few IE languages show lengthened-grade root vocalism in all or some of their active forms of the *s*-aorist. In Vedic Sanskrit four types of sigmatic formations are synchronically distinguished : the *s*-aorist, the *iṣ*-aorist, the *siṣ*-aorist and the *sa*-aorist. Among these the first two constitute one and the same category inherited from Proto-Indo-European. The difference between the *s*- and *iṣ*-aorists is ultimately attributed to the structural difference of roots to which *-s-* is attached ; in general, the *s*-aorist is associated with *aniṭ*-roots (e. g., *avāṭ* "he car-ried" $< *e\text{-}u\bar{e}\hat{g}h\text{-}s\text{-}t$) and the *iṣ*-aorist with *seṭ*-roots having a root-final laryngeal (e. g., *atārīt* "he passed" $< *e\text{-}t\bar{e}r\partial\text{-}s\text{-}t < *e\text{-}t\bar{e}rH\text{-}s\text{-}t$)[4]. The *siṣ*-aorist and the *sa*-aorist are, on the other hand, secondarily created formations best explained as the sigmatized *iṣ*-aorist and *a*-aorist (= thematic aorist), respectively. If all the in-flected *s*-aorist indicative forms were attested from the root *vah-* (IE *$u e \hat{g}h$- "car-ry") in the active and from *stu-* (IE *$steu$- "praise") in the middle, the following paradigm would be expected[5] :

		active			middle		
sg.	1	*avākṣam*	$< *e\text{-}u\bar{e}\hat{g}h\text{-}s\text{-}\underset{\circ}{m}$	*astoṣi*	$< *e\text{-}steu\text{-}s\text{-}h_2$
	2	*avāṭ*	$< *e\text{-}u\bar{e}\hat{g}h\text{-}s\text{-}s$	*astoṣṭāḥ*	$< *e\text{-}steu\text{-}s\text{-}th_2e$
	3	*avāṭ*	$< *e\text{-}u\bar{e}\hat{g}h\text{-}s\text{-}t$	*astoṣṭa*	$< *e\text{-}steu\text{-}s\text{-}to$
pl.	1	*avākṣma*	$< *e\text{-}u\bar{e}\hat{g}h\text{-}s\text{-}me$	*astoṣmahi*	$< *e\text{-}steu\text{-}s\text{-}medhh_2$
	2	*avākṣṭa*	$< *e\text{-}u\bar{e}\hat{g}h\text{-}s\text{-}te$	*astoḍhvam*	$< *e\text{-}steu\text{-}s\text{-}dhue$
	3	*avākṣuḥ*	$< *e\text{-}u\bar{e}\hat{g}h\text{-}s\text{-}\underset{\circ}{r}s$	*astoṣata*	$< *e\text{-}steu\text{-}s\text{-}\underset{\circ}{n}to$

As the above paradigm clearly shows, the *s*-aorist in Vedic Sanskrit is generally

characterized by a lengthened grade -ē- in the active and a full grade -e- in the middle[6].

Although Latin perfect endings are fairly faithful continuants of an Indo-European perfect (1 sg. -ī $<$ *-ai $<$ *-h_2e+i, 2 sg. -istī $<$ *-[is]+tai $<$ *-th_2e+i, 3 sg. -it $<$ *-ei[t] $<$ *-e+i, 3 pl. -ēre $<$ *-ēr+i), its stem formations are varied and cannot be derived from any single IE category. Even if all the dubious examples are excluded, the following forms certainly show the inherited lengthened-grade root enlarged by -s-:

> uēxī "I carried" $<$ *u̯ēĝh-s-h_2e-i
> tēxī "I covered" $<$ *(s)tēĝ-s-h_2e-i
> rēxī "I ruled" $<$ *rēĝ-s-h_2e-i

The ē-grade vocalism of the root is extended inside the paradigm of these Latin verbs.

Other major IE languages which widely use the s-aorist are Greek and Old Irish, both of which came to have innovative endings in their individual history. Greek generalized -σα- in its endings except in the 3 sg. (1 sg. -σα, 2 sg. -σας, 3 sg. -σε, 1 pl. -σαμεν, 2 pl. -σατε, 3 pl. -σαν). The -σα- element is due probably to paradigmatic extension of the 1 sg. -σα ($<$ *-s-m̥) and 3 pl. -σαν ($<$ *-sat $<$ *-s-n̥t). Old Irish s-preterites present an idiosyncrasy in that only the 3 sg. is athematic (conjunct 3 sg. -φ $<$ *-ss $<$ *-s-t; 1 sg. -us $<$ *-ssū $<$ *-ssō, 2 sg. -is $<$ *-ssī $<$ *-ssesi, 1 pl. -sam $<$ *-ssomos, 2 pl. -said $<$ *-ssete, 3 pl. -sat $<$ *-ssont). But this unique feature is consistently observed in all the Old Irish s-formations and the s-preterite in Old Irish must have been athematic in origin[7]. As to the root vocalism, neither Greek nor Old Irish shows the lengthened grade unlike Sanskrit and Latin.

Considering the facts given above, there can be no reasonable doubt that the ē-grade in the s-aorist goes back to the common period; observe especially the undeniable correspondence Skt. avākṣam : Lat. uēxī ($<$ *u̯ēĝh-s-). A notable exception to this view is C. Watkins, who claimed that the lengthened grade characteristic of Indo-Iranian and Latin was a parallel but independent creation inside each of these dialects[8]. There is, however, good reason to refute his view. From a theoretical point of view, Watkins (1962) is highly dependent on the Ablaut theory envisaged by Kuryłowicz (1956) that the lengthened grade is the latest apophonic development in Indo-European. But it is now widely recognized that the ē-grade was fully established in the parent language; Narten (1968) has pointed out a verbal type marked by ē-grade in the active singular and e-grade elsewhere (cf. Vedic stáuti "praises" $<$ *stéu̯-ti, 3 sg. middle stáve $<$ *stéu̯-oi) and the same type with -ē- in the strong cases and -e- in weak cases has been observed in the noun as well by Schindler (1975); cf. nom. sg. *i̯ēkʷ-r̥ "liver" : gen. sg. *i̯ékʷ-n̥-s exemplified by Skt. yákr̥t, yaknáḥ, Gk. ἧπαρ, ἥπατος, etc. In addition Tocharian A preserves

decisively important forms which reject Watkins' view. These forms are 3 sg. *ñakäs* "he destroyed" and 3 pl. *ñakär* "they destroyed" of class III preterite. Toch. A *a* and Toch. B *e* go back to Common Toch. $*\breve{a}$ which is, in turn, a reflex of either PIE $*o$ or $*\bar{e}$. The initial palatalized *ñ* in the above two forms, however, points to the original *ē*-vocalism in the root ($*n\acute{e}\hat{k}$-*s*-).

The overall discussion given above naturally leads us to assume that the PIE *s*-aorist showed the "acrostatic" inflection characterized by lengthened grade in the active singular and by full grade elsewhere. After separation from the common ancestor Sanskrit and Latin preferred $*\text{-}\bar{e}\text{-}$ in the active paradigm, while $*\text{-}e\text{-}$ was generalized in Greek and Old Irish[9].

3. The Paradigm of the Old Church Slavic Sigmatic Aorist

The essential features of the Indo-European sigmatic aorist discussed in the previous section are considerably well preserved in Old Church Slavic[10]. In his descriptive handbook of Old Church Slavic, Lunt (1974 : 90) classifies the OCS sigmatic aorists into three types, the "*s*-aorist", the "*x*-aorist" and the "*ox*-aorist". The paradigms of these three types may be represented below by the verbs, *vesti* "to lead", *rešti* "to say" and *nesti* "to carry", respectively.

s-aorist

sg.	1	*věsъ* ($< *v\bar{e}d$-*s-o-m*)	du.	1	*věsově* ($< *v\bar{e}d$-*s-o-vě*)
	2	*vede* ($< *ved$-*e-s*)		2	*věsta* ($< *v\bar{e}d$-*s-tā*)
	3	*vede* ($< *ved$-*e-t*)		3	*věste* ($< *v\bar{e}d$-*s-te*)
pl.	1	*věsomъ* ($< *v\bar{e}d$-*s-o-mos*)			
	2	*věste* ($< *v\bar{e}d$-*s-te*)			
	3	*věsę* ($< *v\bar{e}d$-*s-ņt̥*)			

x-aorist

sg.	1	*rěxъ* ($< *r\bar{e}k$-*s-o-m*)	du.	1	*rěxově* ($< *r\bar{e}k$-*s-o-vě*)
	2	*reče* ($< *rek$-*e-s*)		2	*rěsta* ($< *r\bar{e}k$-*s-tā*)
	3	*reče* ($< *rek$-*e-t*)		3	*rěste* ($< *r\bar{e}k$-*s-te*)
pl.	1	*rěxomъ* ($< *r\bar{e}k$-*s-o-mos*)			
	2	*rěste* ($< *r\bar{e}k$-*s-te*)			
	3	*rěšę* ($< *r\bar{e}k$-*s-ņt̥*)			

ox-aorist

sg.	1	*nesoxъ* ($< *ne\hat{k}$-*os-o-m*)	du.	1	*nesoxově* ($< *ne\hat{k}$-*os-o-vě*)
	2	*nese* ($< *ne\hat{k}$-*e-s*)		2	*nesosta* ($< *ne\hat{k}$-*os-tā*)
	3	*nese* ($< *ne\hat{k}$-*e-t*)		3	*nesoste* ($< *ne\hat{k}$-*os-te*)
pl.	1	*nesoxmъ* ($< *ne\hat{k}$-*os-o-mos*)			
	2	*nesoste* ($< *ne\hat{k}$-*os-te*)			

3   $nesoš\varrho$ $(< *nek\hat{}-os-\underset{\circ}{n}t)$

Synchronically, the *s*-aorist is characterized by the -*s*- element throughout the paradigm except in the second and third person singular. The *x*-aorist is slightly different from the *s*-aorist in having -*x*- in the first person and -*š*- in the third person plural instead of -*s*-, whereas the -*ox*-aorist is further modified by insertion of -*o*- before the -*s*-, -*x*- and -*š*-.

From a historical point of view, the lengthened grade of the root (OCS *ě* < PIE *$\bar{e}$) is generalized inside the *s*- and *x*-aorist paradigms except in the second and third person singular, where the *ē*-grade vocalism, together with the element -*s*-, is lacking. Schmalstieg (1976 : 105) argues that the second and third singular forms originate from the root aorist ("strong aorist" in his term). Another possibility suggested by Meillet (1924 : 212f.) is a thematic imperfect, which would be favored in terms of the root vocalism identical to that of the present stem and the existence of the thematic vowel -*e*-.   In any event the second and third person singulars are not lineal descendants of the IE sigmatic aorist.

The *s*-aorist and *x*-aorist are originally variants in different phonological environments, both of which basically inherit the Indo-European *s*-aorist.   Diels (1932 : 239) states :

> Im Suffix herrscht entweder -*s*- (ohne weiterer Änderung) oder -*x*- (das vor den mit -*t*- beginnenden Endungen als -*s*-, in der 3 pl. als -*š*- erscheint).   Und zwar herrscht -*s*- bei den Stämmen auf -*t*-, -*d*-,-*p*-, -*b*-, -*s*-, -*z*-, -*m*-, -*n*- ; ... Dagegen herrscht -*x*- (-*s*-, -*š*-) bei Stämmen auf -*k*-, -*g*-, -*r*-, -*l*- und Vokale, ...

This statement is no doubt correct from a synchronic point of view, but the original distribution of -*s*-, -*x*- and -*š*- was determined by two purely phonological rules, that is, the so-called "ruki-rule" and the "first palatalization".   They are roughly formulated as follows :

$$\text{ruki-rule}: \quad s \longrightarrow x \quad \Bigg/ \begin{Bmatrix} r \\ \breve{u} \\ k \\ \breve{\imath} \end{Bmatrix} \underline{\quad\quad} \; [+\text{syllabic}]$$

$$\text{first palatalization}: \quad k, g, x \longrightarrow \check{c}, \check{z}, \check{s} \Bigg/ \underline{\quad\quad} \begin{matrix} V \\ [-\text{back}] \end{matrix}$$

It is important to notice that the above two rules operated feedingly in this order.   Accordingly, -*x*- in the first person and -*š*- in the third person plural were at first limited to the roots ending in -*r*, -*$\breve{u}$*, -*k*, -*$\breve{\imath}$* and then analogically spread to other roots.

As for the *ox*-aorist, the complete absence of the *ē*-vocalism of the root and the persistent -*o*- between the root and -*s*- (-*x*-, -*š*-) unambiguously indicate that it is a

relatively younger formation secondarily created. Therefore serious consideration will not be given to the *ox*-aorist hereafter, though synchronically it is a productive type.

Of enormous importance to our present discussion are the first person forms, which underwent thematization regardless of the number. It is particularly interesting that the thematization is confined to the first person forms and not found anywhere. Favoring the view put forth in the preceeding section that the IE sigmatic aorist was characterized by the "acrostatic" type of Ablaut, the OCS 1 sg. *věsъ*, 1 du. *věsově* and 1 pl. *věsomъ* is informally derived from the protoforms in the following manner[11] :

$$věsъ \quad < \quad {}^*v\bar{e}d\text{-}s\text{-}o\text{-}m \quad < \quad \text{PIE } {}^*\underset{\wedge}{u}\bar{e}dh\text{-}s\text{-}m$$
$$věsově \quad < \quad {}^*v\bar{e}d\text{-}s\text{-}o\text{-}v\bar{e} \quad < \quad \text{PIE } {}^*\underset{\wedge}{u}\bar{e}dh\text{-}s\text{-}v\bar{e} \text{ (?)}$$
$$věsomъ \quad < \quad {}^*v\bar{e}d\text{-}s\text{-}o\text{-}mos \quad < \quad \text{PIE } {}^*\underset{\wedge}{u}\bar{e}dh\text{-}s\text{-}mos$$

Needless to say, loss of final nasals and simplification of consonant clusters are involved in the prehistory of these OCS forms in addition to the thematization and extension of *ē*-grade vocalism.

The *x*-aorist shows independent evidence for the restriction of thematization to the first person forms. As we have already seen, *-s-* must be followed by a vowel so that the ruki-rule may change it to -*x*-. Accordingly the *x*-aorist forms, 1 sg. *rěxъ*, 1 du. *rěxově* and 1 pl. *rěxomъ*, for example, go back to the thematized preforms, ${}^*r\bar{e}k\text{-}s\text{-}o\text{-}m$, ${}^*r\bar{e}k\text{-}s\text{-}o\text{-}v\bar{e}$ and ${}^*r\bar{e}k\text{-}s\text{-}o\text{-}mos$, respectively. If these forms had not undergone thematization, the expected forms would be 1 sg. ${}^{**}r\check{e}s\rho$ ($< {}^*r\bar{e}k\text{-}s\text{-}im < {}^*r\bar{e}k\text{-}s\text{-}\underset{\circ}{m}$) affected by the ruki- and first palatalization rules, 1 du. ${}^{**}r\check{e}sv\check{e}$ ($< {}^*r\bar{e}k\text{-}s\text{-}v\bar{e}$) and 1 pl. ${}^{**}r\check{e}smъ$ ($< {}^*r\bar{e}k\text{-}s\text{-}mos$), but they are not actually attested. The unmodified *-s-* in the 2 du. *rěsta* ($< {}^*r\bar{e}k\text{-}s\text{-}t\bar{a}$), 3 du. *rěste* ($< {}^*r\bar{e}k\text{-}s\text{-}te$) and 2 pl. *rěste* ($< {}^*r\bar{e}k\text{-}s\text{-}t\bar{e}$) unmistakably shows that they are not thematized. The 3 pl. *rěsę* can theoretically be derived either from ${}^*r\bar{e}k\text{-}s\text{-}\underset{\circ}{n}t$ ($> {}^*r\bar{e}k\text{-}s\text{-}int$) or from ${}^*r\bar{e}k\text{-}s\text{-}ent$. But the comparative evidence suggests that the former be more preferable because it does not require any further secondary transformations[12]. The partial thematization found exclusively in the first person forms of sigmatic aorists must have occurred very early in the prehistory of Old Church Slavic; it antedates the ruki-rule and first palatalization at latest. At this point it may be appropriate to summarize the derivational history of several crucial forms[13] :

	3 sg.	1 pl.	2 pl.	3 pl.
Proto-Slavic	*reket*	*rēksmos*	*rēkste*	*rēksint*
partial thematization	—	*rēksomos*	—	—
loss of finals	*reke*	*rēksomъ*	—	*rēksę*
ruki rule	—	*rēkxomъ*	—	*rēkxę*
C-cluster simplification	—	*rēxomъ*	—	*rēxę*

| first palatalization | reče | — | — | rēšę |
| Old Church Slavic | reče | rěxomъ | rěste | rěšę |

4. Epilogue

There is no doubt that the verb *es- "be" and the s-aorist were both character-
ized by the athematic inflection in the common period, though they belonged to
different inflectional types.   It is also a well-known fact that thematization is a
pan-Indo-European phenomenon observable in the history of individual languages.
Therefore it is not unreasonable to suppose that both the Latin copula and OCS
sigmatic aorists underwent thematization in their prehistory.   What is conspic-
uously remarkable in both cases is that only the first person forms were thema-
tized.   This idiosyncrasy shared by Latin and Old Church Slavic is most appro-
priately interpreted as resistance to the entire transfer to a more general and pro-
ductive type, i.e., thematic conjugation.

Incidentally, we have seen in the preceding section that the OCS sigmatic
aorists were partially thematized very early in its prehistory.   If this is also the
case with Latin, the 1 sg. *sum* can be derived by the proportion such as *eramus* :
eram=sumus : X, with X=*sum* having replaced the older *esum* ($<$ *esom*)[14].

<div align="center">Notes</div>

1)   The 3 pl. form must be segmented into s-*unt*, where the ending -*unt* ($<$ *-ont*) is probably an
apophonic variant of -*ent* ; cf. Doric ἐντί, Gothic *sind* vs. Old Church Slavic *sǫtъ*.

2)   A good summary of the literature on the problems is found in Nyman (1977).   Nyman's own
scenario of the mechanism of remodeling processes is quite insightful, but still nondemonstrable in
my judgement.

3)   A similar view has already been presented tentatively by many scholars ; e.g., Ernout (1953 :
176).

4)   In Iranian any kind of laryngeals disappeared between consonants, which caused the entire
absence of *iṣ*-aorist in this branch.

5)   The dual forms, which do not have immediate relevance to the present discussion, are omitted for
convenience' sake.

6)   There are a number of roots which show a zero-grade in the middle ; e.g., *asṛṣṭa* $<$ *e-slĝ-s-to* (*sṛj*-
"emit").   The root vocalism in the middle forms of these verbs is, in all probability, secondary.

7)   Old Irish has a descriptive category named 't-preterite', which Watkins (1962 : 156ff.) has convinc-
ingly shown to be a transformed variant of the s-aorist.

8)   Cf. Watkins (1962 : 18ff.).

9)   Some of the Hittite and Tocharian facts are not easily reconciled with this reconstruction.   These
problems are, however, of no immediate relevance here.

10)   The following discussion is limited to the active paradigm because Balto-Slavic systematically lost
the Indo-European middle.

11)   The choice of the -*o*- in the first person is consistent with the general distribution of thematic
vowels.

12)   The phonological outcome of the syllabic resonant $*\underset{\circ}{n}$ in Balto-Slavic is $*in$.   In Slavic $*in$ became ьn before vowels and ę before consonants.   In any event, the 3 pl. -ę never goes back to $*-ont$, the o of which is, according to Buck's speculation, a possible source of u of Latin 1 sg. *sum* and 1 pl. *sumus*, as we have earlier seen.

13)   The relative ordering of "loss of finals" and "C-cluster simplification" to the other rules is not relevant here, and therefore their positions in this derivation are only provisional.   The C-cluster simplification, however, must follow the ruki-rule.

14)   This analogical change is against Kuryłowicz' second "law" of analogy : "les actions dites 'analogiques' suivent la direction : formes de fondation → formes fondées, dont le rapport découle de leurs sphères d'emploi."   It must be noted that there are a considerable number of examples which do not obey his laws.

REFERENCES

Buck, C. D. 1933. *Comparative Grammar of Greek and Latin.* Chicago : The University of Chicago Press.

Diels, P. 1932. *Altkirchenslavische Grammatik.* Heidelberg : Carl Winter.

Ernout, A. 1953. *Morphologie historique du latin.* Paris : Klincksieck.

Kuryłowicz, J. 1956. *L'apophonie en indo-européen.* Wrocław : Polskiej Akademii Nauk.

——. 1966. "La nature des procès dits 'analogiques'." *Readings in Linguistics* II. eds. by E. P. Hamp et al. (Chicago : The University of Chicago Press), 158-174.

Lunt, H. G. 1974. *Old Church Slavonic Grammar.*   The Hague : Mouton.

Meillet, A. 1924. *Le slave commune.*   Paris : Champion.

Narten, J. 1968. "Zum 'proterodynamischen' Wurzelpräsens." *Pratidānam.* eds. by J. C. Heesterman et al. (The Hague : Mouton), 9-19.

Nyman, M. A. 1977. "Where Does Latin *sum* Come From ?"   *Language.* 53. 39-60.

Schindler, J. 1975. "L'apophonie des thèmes indo-européens en -r/n-." *BSL* 70. 1-10.

Schmalstieg, W. R. 1976. *An Introduction to Old Church Slavic.* Cambridge, Mass.: Slavica Publishers.

Watkins, C. 1962. *Indo-European Origins of the Celtic Verb* I.   *The Sigmatic Aorist.* Dublin : The Dublin Institute for Advanced Studies.

——. 1969. *Indogermanische Grammatik* III/1.   *Geschichte der Indogermanischen Verbalflexion.*   Heidelberg : Carl Winter.