The Proto-Slavic Genitive-Locative Dual: A Reappraisal of (South-)West Slavic and Indo-European Evidence*

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Abstract: The preservation of length in the West Slavic and South-West Slavic genitive-locative dual in *-*ū* is unexpected and to date unexplained. BCS *rùkū* 'hands$_{GEN.PL}$' is likely to continue a trisyllabic preform. At the same time, Indo-Iranian and Greek offer strong evidence for PIE *o*-stem and *ā*-stem archetypes that should have yielded late Proto-Slavic and OCS *-*oju* (thus, OCS **rǫkoju*), rather than *-*u*. The actually attested OCS form is *rǫku*. The present study seeks to provide a unified account of these two problems. The development of some of the PIE dual endings in other daughter traditions, including Greek and its dialects, is also addressed.

1. Background

Only a handful of the historical Indo-European languages have retained the Proto-Indo-European (PIE) dual category. What is more, the few attested dual forms across the IE family are largely irreconcilable. Due to the scanty and

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Abbreviations: AP = accentual paradigm; Arc = Arcadian; Av = Avestan; Att(Gr) = Attic (Greek); BCS = Bosnian/Croatian/Serbian; Čak = Čakavian; eHSl = early historical Slavic (oldest attested Slavic, i.e., OCS and Old Russian combined); ePPSl = early post-Proto-Slavic (early Slavic dialects *after* their separation from Proto-Slavic but *before* their written attestation); ePSl = early Proto-Slavic; GAv = Gathic Avestan; Gmc = Germanic; Go = Gothic; GPol = Greater Polish; Hom(Gk) = Homeric (Greek); Indo-Ir = Indo-Iranian; Kajk = Kajkavian; LPol = Lesser Polish; lPSl = late Proto-Slavic; Myc = Mycenaean; OHG = Old High German; OIr = Old Irish; ON = Old Norse; OPol = Old Polish; OSln = Old Slovene; PC = Proto-Celtic; PGmc = Proto-Germanic; (S)ESl = East and South-East Slavic; Slk = Slovak; Sln = Slovene; Štok = Štokavian; (S)WSl = West and South-West Slavic; Ved = Vedic.

largely disparate nature of the extant data, the reconstruction of the dual endings is a notoriously difficult business—both at the PIE level and within the individual branches. This article revisits the question of the exact shape of the genitive-locative dual morpheme(s) in late Proto-Slavic (lPSl) and in dialectal early post-Proto-Slavic (ePPSl). Based on comparative Indo-European, West Slavic, and South-West Slavic evidence, a second lPSl/ePPSl gen.-loc.du. ending is posited, which, it is argued, existed in Proto-Slavic alongside the conventionally reconstructed termination *-*u*.

The lPSl state of affairs seems easily reconstructible. The oldest and best-attested medieval Slavic languages, OCS and Old Russian (OR) (which in what follows are referred to collectively as "early historical Slavic" or eHSl), point to a single invariant gen.-loc.du. ending shared by all stem types—the "textbook" ending *-*u*:

(1)	stem type	OCS	OR	lPSl	gloss
	o-stems	*vlъk-u*	*vъlk-u*	**vъlk-u*	'two wolves'
	ā-stems	*rǫk-u*	*ruk-u*	**rǫk-u*	'two hands'
	ĭ-stems	*gost-ij-u*	*gost-ьj-u*	**gost-ьj-u*	'two guests'
	ŭ-stems	*syn-ov-u*	*syn-ov-u*	**syn-ov-u*	'two sons'
	ū-stems	*lok-ъv-u*	*lok-ъv-u*	**lok-ъv-u*	'two waterholes'
	consonant stems	*dъšter-u*	*dъčer-u*[1]	**dъ(k)t'er-u*	'two daughters'

Owing to the perfect agreement between OCS and OR, the reconstruction of lPSl *-*u* has never been in much doubt.[2] One finds the ending reconstructed this way in all classical treatments of historical Slavic grammar—from Miklosich (1876: 6), Meillet (1934: 396–97), Trávníček (1935: 294), and Vaillant (1958: *passim*), to Schenker (1993: 87), Townsend and Janda (1996: 143, 176), Sussex and Cubberley (2006: 229–34), and Olander (2015: 205–12). However, the familiar (S)ESl case form in (1) is formally irreconcilable with its less well-known (S)WSl counterpart seen in Štok BCS *-ū*, Czech *-ou*, and OPol *-ū* > Pol *-u*. These latter endings are embedded synchronically in the plural paradigms as anomalous *genitive* or, in the case of Polish, *locative,* plurals:

[1] Beside innovative OCS *dъšteriju* and OR *dъčerьju* modeled after *ĭ*-stem nouns.

[2] Of course, from a purely synchronic point of view the gen.-loc.du. endings in the *ĭ*-, *ŭ*-, and *ū*-stem declensions are lPSl/eHSl *-ьju*, *-ovu*, and *-ъvu*, respectively (as opposed to just *-u*).

(2) Štok *rúka* (acc. *rûku*) 'hand' — gen.pl. *rùkū* = Cz *rukou*, Pol *ręku*[3]
Štok *nòga* (acc. *nȍgu*) 'leg' — gen.pl. *nȍgū* = Cz *nohou*
Štok *slúga* (acc. *slúgu*) 'servant' — gen.pl. *slùgū*[4]

It is tempting to derive the forms in (2) from a single archetype in dialectal early post-Proto-Slavic, namely, a (S)WSl *-*ū*. However, such a (S)WSl form would be phonologically incompatible with the routinely set up lPSl archetype *-*u*. BCS *rùkū*, *nȍgū* and Cz *rukou*, *nohou* both point to lPSl (or dialectal ePPSl) gen.pl. **rǫkū*, **nogū* with final length, which would require an explanation. In turn, OCS *rǫku*, *nogu* and OR *ruku*, *nogu* are indeed derivable from the conventionally posited lPSl preforms **rǫku*, **nogu*.

Under the mainstream view, the mismatch in vowel quantity between the case morphemes in OR *ruku* and BCS *rùkū* is fatal for their cognacy. Indeed, while it is true that lPSl *-*u* continues a PIE diphthong[5] and originally patterned with the ePSl long vowels, the majority view holds that "…already in [late] proto-Slavonic times… *final* long vowels became shortened. We find no trace of differences of intonation being retained in final syllables. This conclusion can be reached owing to the preponderant agreement in this sphere between all Slavonic languages where any difference in quantity at all is to be observed" (Stang 1957: 36–37).[6] Within this traditional—still mainstream—

[3] Pol *ręku* continues OPol *røkū* and synchronically functions as an alternative locative plural (= *ręka*ch).

[4] In addition to these "textbook" examples of the anomalous gen.pl. in *-u* (*rùkū*, *nȍgū*, *slùgū*), one finds multiple other examples in older and dialectal BCS, e.g., *rogu* 'horn$_{GEN.PL}$' (x2 in 18th c. Dalmatian compositions) from *rôg* 'horn'; *pȅtū* 'heel$_{GEN.PL}$' (in Slavonia) from *péta* 'heel'; *vràtū* 'door$_{GEN.PL}$' (in Vareš and Visoko, Central Bosnia) and *vrátu*, *vrātù* '*idem*' (in Slavonia) from *vráta* 'doors'; etc. (see, e.g., Belić 1965: 78). All these anomalous genitive plurals coexist in Standard BCS with regular forms in *-ā*: *rúkā*, *nógā*, *slúgā*, *pétā*, *vrátā*, etc.

[5] The PIE gen.-loc.du. ending is reconstructed as *-h_x*oų* and/or *-h_x*eų* (more on this below).

[6] Cf. also Seliščev 1941: 116, 339; Shevelov 1965: 507; Carlton 1991: 212; Schenker 1993: 80; Kapović 2003: 57–58; Kapović 2005a: 30; etc. To be sure, there are subsets of data, which are difficult to reconcile with such an exceptionless vowel-shortening rule, cf., e.g., lists of lPSl long endings in Dybo 1981: 31–32 and Stang 1957: 37–40. It is worth noting, however, that Stang, while acknowledging "certain exceptions" to the word-final vowel shortening rule, still saw only *one* long ending as potentially Proto-Slavic (1957: 39). At the same time, he observed that the scattered instances of length in absolute auslaut are each found either in a *single* daughter language or in a small *subset* of daughter languages, and for each long ending the subsets of daughter languages do not match. Therefore, Stang reasoned, the instances of final length could not have all been inherited from Proto-Slavic (ibid). In the end, Stang denied the possibil-

framework, Štok BCS *rùkū*, *nȍgū* and Cz *rukou*, *nohou* cannot continue lPSl **rǫku*, **nogu*.

The significance for comparative purposes of (S)WSl **rǫkū*, **nogū*, etc., has largely escaped the attention of historical linguists—both Slavists and Indo-Europeanists alike. Only a handful of treatments of Slavic historical morphology have acknowledged the (S)WSl formant **-ū* as a problematic (and potentially telltale) item, and even fewer still have ventured an account of its unexpected length. Thus, in his 1975 book Kortlandt notes BCS *rùkū* in passing and declares, without further discussion, that "it does not seem possible to base any conclusions on [it]" (Kortlandt 1975: 48).

An early attempt to explain *-ū* (in Czech and Slovak only) is by Trávníček, who relied on prehistoric contraction: PSl **toju* > **tū* > OCz *tú* 'that$_{GEN/LOC.DU}$' PSl *ĭ*-stem **kostъju* > **kostʹū* > OCz *kostʹú* 'bone$_{GEN/LOC.DU}$' etc. Already within Proto-Czech-Slovak, Trávníček argued, this new long allomorph was generalized to all noun classes (Trávníček 1935: 294, fn. 82).

Stang (1957: 63) merely alluded to the problem. The status of the traditionally reconstructed lPSl gen.-loc.du. in **-u* in the mobile *ā*-declension (**golvu̯*, etc.) is uncertain, he says, because, theoretically, Slovincian *-ū* may go back to **-oju* (a preform also surmised by Sadnik 1959; see fn. 35 below).

Dybo (1981: 31–32) at one time maintained that only *unstressed* long vowels were subject to shortening in absolute auslaut, whereas stressed longs in AP *c* preserved their original length. Within a more recent and more elaborate theory, two register tones, "dominant" or high (+) and "recessive" or low (–), have been posited for Balto-Slavic, in addition to the traditionally reconstructed "intonations," i.e., acute and circumflex (see, e.g., Nikolaev 1989: 96–97 and Dybo, Zamjatina, and Nikolaev 1993: 16–17). The two binary features (the register tones and the "intonations") combine to give four permutations: dominant or recessive acute and dominant or recessive circumflex. It is further argued that ePPSl dialects[7] fall into three groups depending on the subsets of forms that retain final length. The dominant acute endings (of which *o*-/*ā*-stem gen.-loc.du. $^{+}$*-ű* is said to be an instance) give long reflexes in all three groups (Dybo, Zamjatina, and Nikolaev 1993: 22–27).

ity that PIE diphthongs might have retained their original length in auslaut in late Proto-Slavic (1957: 40).

[7] The authors contend that the modern South, East, and West Slavic dialect continua did not evolve directly out of late Proto-Slavic dialects. Rather, these subgroups formed relatively late and are each heterogeneous in origin. The authors use a completely different classification of Slavic dialects, presumably reflecting an earlier, lPSl/ePPSl dialectal division, which they base entirely on accentological data (see, e.g., Dybo, Zamjatina, and Nikolaev 1990: 109–22, 155–59; Dybo, Zamjatina, and Nikolaev 1993: 5, 18–21).

The diachronic rule formulated within the earlier hypothesis does not apply regularly: stressed terminations are said to retain their original length "as a rule" (Dybo 1981: 31). The more recently proposed vowel-shortening pattern is not exceptionless either: "Vowels under dominant acute usually retain length, but there are several exceptions…" (Dybo, Zamjatina, and Nikolaev 1993: 24). These include the *ā*-stem nom.sg. ending $^{+}$*-ā́*, the *i*-stem loc.sg. ending $^{+}$*-ī́*, and the *u*-stem loc.sg. ending $^{+}$*-ū́*, which remain long in group 1, but undergo shortening in groups 2 and 3 (1993: 25).[8] Dybo and his coauthors thus seem to operate within a conceptual framework that allows for a nonsystematic application of phonological rules. They seem to resort to synchronic gradience resulting from diachronic gradualness, i.e., a stepwise progression of sound change (see esp. 1993: 18).

An explanation of gen.-loc.du. **-ū* based on a systematic phonological process or processes would be more neat and economical, and as such more preferable.

Lehfeldt 2009 similarly as Dybo appears to believe that the historically long vowels *sometimes* preserved—or, perhaps, reintroduced?—length in the absolute final position under stress; cf. his lPSl reconstructions of end-stressed AP *b* and AP *c* case forms, such as gen.-loc.du. **kosu̍*, **golvu̍*, **synovu̍*, gen.sg. **kosy̍*, **golvy̍*, inst.sg. **golvojǫ̍*, loc.sg. **synu̍*, dat.-inst.du. *synъmā̍*, inst.pl. *synъmī̍*, etc. (2009: 46–49).

Regular retention of final length in certain environments has been assumed by Kortlandt, who argued in particular that "…non-acute long vowels in post-tonic [including final—Y. G.] syllables were not shortened, e.g., **òsnowā* 'base', inst.pl. **žènamī* 'women,' where the final long vowel is reflected by the neocircumflex tone of Slovene *osnôva* [< **osnȍvā*], *ženâmi* [< **ženȁmī*]; also Czech dial. inst.pl. *chlapý* 'fellows', *vratý* 'gates', *cestamí* 'roads', *namí* 'us', Slovak nom. pl. *mestá* 'cities', *dievčatá* 'girls'" (Kortlandt 2006: 12, pagination following the online version; cf. also Kortlandt 1983/1994/2002: 7, 13, 14, pagination following the online 2002 version). Kortlandt also believes that stressed nasal vowels retained length in auslaut, hence BCS gen.sg. *glávē*, *žènē*, etc. (Kortlandt 1983/1994/2002: 14; Kortlandt 2005: 125).

None of these views is unproblematic.

A more economical and straightforward way of explaining length in BCS *-ū* has been proposed by Kapović. It involves analogical extension of vowel length from the *ĭ*-stem genitive plural: "In Croatian, the long *-ū* (cf. forms like *nȍgū*, *rùkū*, *slúgū*), which is today one of the genitive plural endings, is due to

[8] Group 1 is Pomeranian (Kashubian-Slovincian), as well as some Slovenian and Kajkavian dialects (Dybo, Zamjatina, and Nikolaev 1993: 22). Group 2 is Herzegovina and Šumadija-Vojvodina Štokavian, South Čakavian of Hvar and Brač, the Old Croatian dialect of Križanić, Slavonian, Polesian, Il'men-Slovenian (Old Novgorodian), and the majority of the Czech, Slovak, and Polish dialects (1993: 23). And Group 3 is "Antean" (i.e., the dialect of the *Antes*) (1993: 23–24).

the influence of the *ĭ*-stem genitive plural *-ī*, in which the length is the result of the contraction of the old ending **-ijъ* < **-ьjъ*" (Kapović 2006: 64, fn. 196).

While not directly falsifiable, this account suffers from a few weaknesses.

First, a note is warranted on the ability of the *ĭ*-declension to exert influence on other stem types. In late Proto-Slavic such influence is beyond doubt. Yet, even at that early stage, it only affected the consonant-stem and *ū*-stem types (the acc.sg. in **-ĭn* being a/the pivot form).[9] And even in these two stem types the original genitive plural form (in **-ъ*), which occupies a central place in Kapović's scenario, actually remained intact in late Proto-Slavic and early historical Slavic. Nor did the *ĭ*-declension have any impact on any other noun classes. Note, in particular, that the *(j)o-* and *(j)ā*-declensions, on which the present study focuses, were immune to any influences from the *ĭ*-stem class in Proto-Slavic and early historical Slavic.

Moreover, in the daughter languages an opposite—widespread and pronounced—tendency has been manifest: some of the historical *ĭ*-declension case forms have been replaced with more productive allomorphs originating in other noun classes.[10] The *ĭ*-stem declension was *recessive* in both the masculine and the feminine genders: rather than influencing other stem types, it has itself undergone various changes triggered by interparadigmatic analogies. In particular, the masculine *ĭ*-stems have completely lost their identity as a separate class within the history of the individual Slavic languages.

To be sure, in historical Slavic there have been instances of analogy working in the opposite direction, but these occur rather sporadically (mostly in dialects) and are relatively recent. Thus, in Standard BCS the *ĭ*-stem gen.pl. in *-ī* < **-ьjъ* (*pútī* < **pǫtьjъ*, *kòstī* < **kostьjъ*, etc.) has expanded somewhat beyond its original domain, namely to some feminine *ā*-stem nouns; cf. the occasional gen.pl. form such as *gòzbī* from *gòzba* 'feast,' *mâjkī* from *mâjka* 'mother,' etc. A few more such forms occur sporadically in the dialects[11] and in older BCS. Similarly, in Czech, *ĭ*-stem gen.pl. *-í* < **-ьjъ* obtains in a subset of *jā*-stems, cf. *duší* 'soul$_{GEN.PL}$', *houslí* 'violin$_{GEN.PL}$', etc. (beside *ulic* 'street$_{GEN.PL}$', *chvil* 'minute$_{GEN.PL}$', etc.).[12] Several more examples of intrusive *ĭ*-stem case forms

[9] Multiple original endings were replaced with the respective *ĭ*-stem forms, including inst.sg. fem. **-ьjǫ*, dat.-inst.du. **-ьma*, dat.pl. **-ьmъ*, inst.pl. **-ьmi*, loc.pl. **-ьxъ*, etc.

[10] In Old Russian, this replacement occurred first in the singular, later in the plural. For a discussion of this development see, e.g., Borkovskij and Kuznecov 1963: 189–94 and Vlasto 1986: 94–95).

[11] Roughly speaking, such dialects tend to cluster in the vicinity of Montenegro and Southern Dalmatia; cf., e.g., *ljeti*, *tijeli*, *usti*, etc. (in 15th c. Dalmatian and Dubrovnik documents), *tlī* (Dubrovnik), *vrātî* (Podgorica, Montenegro), *jājî(g)*, *krstî(g)* (Prčanj, Montenegro), etc. For more data, see Belić 1965: 77–78.

[12] Nouns in *-ce*, *-le*, and *-yňe* are usually immune to the intrusion of the *ĭ*-stem gen.pl. (Seliščev 1941: 137–38).

are found in *jā*-stems in Older Czech (see, e.g., Trávníček 1935: 314–15 for examples).

It is, however, conspicuous that in each such case the intrusive *ǐ*-stem form coexists, or has demonstrably coexisted, with the original *(j)ā*-stem variant, cf. BCS *gòzbī* 'feast$_{GEN.PL}$' beside *gózbā*, *mâjkī* 'mother$_{GEN.PL}$' beside *mâjkā*, etc.; cf. also Cz *duší* 'soul$_{GEN.PL}$' beside *duš*, Cz *nedělí* 'Sunday$_{GEN.PL}$' beside *neděl* 'week$_{GEN.PL}$', etc. (Trávníček 1935: 315; Seliščev 1941: 137–38). These coexisting doublets bespeak a *recent* introduction of this kind of variation on the western periphery of the Slavic-speaking realm. This is a strikingly different picture from the one of a consistently long affix *-ū* with no (theoretically expected) original short allomorph **-u* beside it. Therefore, Cz gen.pl. *-ú* > *-ou* has to be older than, and represent a different phenomenon from, Cz gen.pl. *-í*/*-ø*.

A few more details on analogical developments involving the declensional patterns of the historical *ǐ*-stems are provided in the Appendix.

The antiquity of gen.-loc.du. *-ū* is further underscored by the fact that it is shared by most (S)WSl languages: cf. BCS *-ū*, Slovak *-ú*, Czech *-ú* > *-ou*, Polish *-ū* > *-u*, Slovincian *-ū*. It looks very much as if a gen.-loc.du. in **-ū* were a lPSl/ePPSl areal feature within a prehistoric dialect continuum located at the western periphery of a disintegrating and expanding Proto-Slavic.

There are three implications of a lPSl/ePPSl status of **-ū*.

First, the unattested original Slovene and Sorbian gen.-loc.du. markers, would have been (historically) long.[13]

[13] From the earliest attested stages of Slovene, there has been dual/plural syncretism in the genitive and locative cases in nouns and adjectives: gen. and loc. plural forms have been universally used, cf. OSln *tiu* ***ozhetov***, i.e., *tiju o(t)četov* 'horum duorum patrum' in Bohorič's *Arcticae Horulae* (1584: 47); *v sreidi dveiu* ***razboinikov*** 'between two thieves' in Trubar's *Novi Testament* (1582: 345); *de dveiu človeikov pričovane ie risničnu* (John 8:17) 'that the testimony of two men is valid' (1582: 401), etc. The original gen.-loc.du. marker *-u* appears only in the pronominal system and in the paradigm of the numeral 'two' (OSln *dveiu*). Another very early development in Slovene is the replacement of the dual by the plural in nonpronominal noun phrases when the referent is a natural pair: cf. *pogledaite* ***muih rok*** *inu* ***muih nug***, *zakai iest sem ta isti* (Luke 24:39) 'behold My hands$_{PL}$ and My feet$_{PL}$, that it is I Myself' (1582: 356). Both these usages had been fully established already in preliterary times, and the "16th c. texts show practically the same state as found in the contemporary language" (Derganc 2003: 177; see also Derganc 1988: 241, 243 and Belić 1932: 71–76). Even if PSl nominal **-ŭ* had survived, its quantity would remain unknown. As a rule, Old Slovene documents do not employ any graphic device to mark length. Only Bohorič in his *Arcticae Horulae* attempted to distinguish vowel quantity by marking long vowels with the acute and short vowels with the grave. However, it is clear from the wrong distribution of those diacritics that Bohorič's native dialect no longer had quantitative distinctions (Kolarič 1971: 38).

In Upper Sorbian, the nominal gen.du. form is identical with the gen.pl. in *-ow* (< **-ovъ*). In Lower Sorbian, the nominal gen.du. ending is *-owu*. It either continues PSl *ŭ*-stem gen.-loc.du. **-ovu* (generalized to all stem types) or is a "compromise" form

Secondly, and much more importantly, Kapović's purported analogical extension of length from *ǐ*-stem gen.pl. *-ī* to the case affix *-u* would have occurred when the dual was still a living category everywhere in Slavic and forms in *-u* had not yet been redeployed as genitive plurals but still functioned as genitive-locative duals. This undermines Kapović's theory of a semantically motivated extension of a prosodic feature to a functionally identical case marker. One also wonders about the chronology of the contraction of **-ьjь* to *-ī* in South West Slavic. Kapović's (2006) explanation of *-ū* is therefore unlikely on chronological and functional grounds.

Thirdly, a unified account of both the West Slavic and South West Slavic data is preferable to two individual scenarios.

Trávníček's explanation only works for Czech and Slovak and cannot be used to account for *-ū* in BCS because the *ǐ*-stem gen.loc.du. in *-ьju* > *-iju* has never undergone contraction there. In Serbian manuscripts of the 15th–16th c. (predating the "new jotation" in most Štokavian dialects) *ǐ*-stem forms in *-iju* coexist with *ŏ-/ā*-stem forms in *-ū*, thus *po ušiju*, *u očiju*, etc., beside *po ruku*, *u ruku*, *na nogu svojeju*, *mojeju ustnu*, *oběju stranu*, *po dveju čoveku*, *siju dviju gospodinu*, etc. (Belić 1965: 58, 60). In fact, uncontracted *-iju* is still there in BCS to this day: cf. gen.pl. *òčijū*, *ùšijū*, *nòćijū* (beside *nòćī*, *nóćī*). It is plain that PSl **-ьju* cannot underlie BSC *-ū* and that Trávníček's explanation of the Czech facts is therefore inapplicable to BCS.

It is somewhat easier to extend Kapović's BCS-based hypothesis to the WSl data. OCz gen.-loc.du. *host'ú* would owe its length to gen.pl. *hostí* < **gostьjь* (before the latter form was analogically remade to ModCz *hostů*). At the same time, it is hard not to agree with Kortlandt that such a development would constitute "analogical spread of vowel length under obscure conditions" (Kortlandt 2005: 125). Kapović himself does not apply his scenario for BCS to West Slavic. For Old Czech he operates with a different, albeit likewise analogical, source of length: the long ending in OCz *rukú*, *nohú*, etc. was imported from the pronominal system (cf. OCz *najú*, *vajú* > *její*, *vají*), where, in turn, "the length of the final *-ú* is… due to analogy with the forms which developed the long *-ú* by contraction: *jú* < **jejь̀*, *tú* < **tojь̀*, *dvú* < **dvojь̀*, *obú* < **obojь̀*, *mú* < **mojь̀*, *tvú* < **tvojь̀*, *svú* < **svojь̀*. This long *-ú* has been generalized not only in the forms *najú*, *vajú*, but also in all genitive-locative dual nominal forms in OCz: *očú*, *ušú*, *host'ú*, *zubú*, *letú*, etc." (Kapović 2006: 64, apparently relying in part on Trávníček 1935). Such a direct importation of a pronominal ending into

combining historical *ŭ*-stem gen.pl. **-ovъ* with gen.-loc.du. **-ŭ̌*. Whether the latter was long or short cannot be ascertained. Both Sorbian languages lost distinctive vowel length in prehistoric times, save for a few potential, poorly interpretable traces (Carlton 1991: 195–96, 273).

a nominal paradigm would be an atypical occurrence in historical Slavic.[14] Kapović's theory would gain in plausibility if the analogical source *-ú* were sought in adjectival forms (gen.-loc.du. **dobroju* > OCz *dobrú*, etc.) rather than in pronominal forms (**toju*, **tvoju*, etc.). Trávníček's nominal *ĭ*-stem **-ьju* as the source of Cz/Slk *-ū* is also superior to a pronominal source. Yet, the biggest objection to Kapović 2006 is that he deploys two accounts for what looks like one and the same phenomenon.

Even more problematic (for any existing account) is the unexpected shortening of the root vowels in BCS *rùkū*, *slùgū*, and dialectal *vràtū*, *pȅtū* (see fn. 4), which no existing theory addresses. Kapović quotes the current standard textbook form *slúgū* (with a long root vowel), but it is *slùgū* that is the original form.[15] The leveled variant *slúgū* (nom. *slúga*, acc. *slúgu*) is an innovation, which largely replaced *slùgū* only in the course of the 1990s and early 2000s.[16]

The short root vowel in *rùkū*, *slùgū*, *vràtū*, *pȅtū*, etc., requires an explanation.

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[14] All known instances of such an importation are prehistoric. The substitution of the *o*-stem nom.pl. in **-ōs* with pronominal **-oi* took place in Balto-Slavic or possibly even in late (dialectal) PIE. The replacement of **-b^h-* with pronominal **-m-* in the dat.-abl. and inst. plural and dual is a "North-Indo-European" (Germanic and Balto-Slavic) development and must have occurred deep in prehistory. The oft-posited analogical substitution of *o*-stem nom.-acc.sg. neuter **-om* with pronominal **-od* in Slavic and East Baltic (cf. Leskien 1876: 68–69; Brugmann 1892: 565–66, 761; Vermeer 1991/2009: 4, 12; Vermeer 1994: 146; Kortlandt 1983/1994/2002: 4, 5; Kortlandt 2008: 7; Olander 2009: 167; Olander 2015: 105–06; etc.)—if that is indeed the correct account of Sl nom-acc.sg. neut. *-o*—would have taken place well within Proto-Slavic. As for the post-PSl cases, such as dialectal Czech and BCS nominal gen.pl. forms in *-ch* and *-h*, respectively, or Polish forms such as gen.sg. *sędziego* (beside *sędzi*), acc.sg. *sędziego* (beside *sędzię*), dat. sg. *sędziemu* (beside *sędzi*), etc. (from *sędzia* 'judge'), these endings have been imported from the adjectival inflection rather than directly from the pronominal one.

[15] *Slúgū* is a clear innovation resulting from paradigmatic leveling (cf. nom.sg. *slúga*, acc.sg. *slúgu*, alternative gen.pl. *slúgā*, etc.). Similarly, beside *rùkū*, there is leveled *rúkū* (cf. nom.sg. *rúka*, alternative gen.pl. *rúkā*, etc.). Short *ù* in *slùgū* and *rùkū* is synchronically unmotivated and must be viewed as an archaism. Older scholarly treatments, dictionaries, and textbooks list *slùgū* as the only standard form (cf. Daničić 1925: 5; Prince 1951: 21; Arbuzova, Dmitriev, and Sokal' 1965: 81; Gudkov 1969: 31; Stevanović 1971: 152; Stevanović, Popović, and Micić 1973: 866; Stevanović 1975: 235; Stanojčić et al. 1989: 79; etc.; cf. also Browne 1993: 322). *Slùgū* is also found in Slavonian Štokavian (Ivšić 1971: 181) and Kajkavian (Kapović 2003). It is still the only permissible form in the Belgrade dialect of my informants (Nada Petković, Miloš Đorđević, and Jelena Vujić).

[16] The 1991 edition of *Glasovi i oblici hrvatskoga književnog jezika* has *slùgū* and *rùkū* (Babić et al. 1991: 590–91), but its 2007 edition already has *slúgū* and *rúkū* (Babić et al. 2007: 393). The latest edition of *Rečnik srpskoga jezika* also gives the leveled form *slúgū* (Vujanić et al. 2007: 1242).

2. An Invariant Ending in All Stem Types

The uniformity of the genitive-locative dual ending across all declensions in OCS and Old Russian (see (1) above) is striking. There is only one other case/number form that is homogenous across all stem types, namely the gen.pl. in *-ъ* (together with its allomorph *-ь* adjusted for tonality). All the other case/numbers in late Proto-Slavic and early historical Slavic have a distinct ending in each declension. This proliferation of case allomorphs results from multiple phonological processes which took place on the morpheme boundary within PIE and later within Proto-Slavic. These processes have resulted in a merger of stem suffixes with case endings, thereby obscuring the original tripartite morphemic structure of most case forms. Figure (3) provides a sampling of the various vowel-raising, vowel-deletion, contraction, and monophthongization processes that have operated on and across morpheme boundaries between early and late Proto-Slavic in the *o*-stems:

(3) ePSl **wĭlk-o-ï* > lPSl **vьlc-ě* 'wolf$_{LOC.SG}$'
ePSl **wĭlk-o-(h$_2$)ad* > lPSl **vьlk-a* 'wolf$_{GEN.SG}$'
ePSl **wĭlk-o-n* > **wĭlk-ŭ-n* > lPSl **vьlk-ъ* 'wolf$_{ACC.SG}$'
ePSl **wĭlk-o-ns* > **wĭlk-ŭ-ns* > lPSl **vьlk-y* 'wolf$_{ACC.PL}$', etc.

Against this background, a single gen.-loc.du. formant **-u* shared synchronically by *all* lPSl stem types stands out. It invites a different approach to the problem of the origin of (S)WSl **-ū*, which after all may not continue lPSl **-u*. Indeed, (S)WSl **-ū* and (S)ESl **-u* may represent two originally *different* lPSl endings, each generalized at the expense of the other in two ePPSl dialect areas. Such a generalization in the opposite direction in the two dialect areas would have produced the "uniformity-across-declensions" effect observed above in (1), at the same time making it unnecessary to derive (S)WSl *-ū* from lPSl. **-u*—an exercise that takes a lot of special pleading.

The remainder of this paper will discuss the possible phonological shape and distribution of this newly-posited Proto-Slavic morpheme—the archetype of (S)WSl *-ū*.

3. From PIE to Proto-Slavic

Let us start at the PIE level and project the relevant PIE dual forms forward in time by applying the known Proto-Slavic sound changes. We will thus arrive at the gen.-loc.du. endings expected for each stem type at the lPSl level.

As noted earlier, reconstruction of the dual affixes presents much difficulty for both Indo-Europeanists and comparativists working on individual branches of Indo-European. The quality of the extant data is poor, and a complete and accurate reconstruction of all PIE dual endings—nominal and verbal alike—seems hardly possible. That said, the lack of clarity among Slavic historical linguists on PIE and ePSl dual endings has been greater than it needs to be. Thus, Schenker (1993: 87) operates with rather fantastic archetypes of the direct cases: *-*ā-ĭ* (in *ā*-stems), *-*ŏ-e* (*o*-stems), *-*ŭ-e* (*ŭ*-stems), *-*ĭ-e* (*ĭ*-stems), and *-*e* (consonants stems).[17] His PIE preforms of the gen.-loc.du. terminations are for the most part unwarranted: *-*ā-ou̯s*, *-*ŏ-ou̯s*, *-*ou̯-ou̯s*, *-*ei̯-ou̯s*, *-*ou̯s*, etc. Townsend and Janda (1996: 143) posit very similar gen.-loc.du. markers, all ending in *-*s* (more on this below). Kortlandt (1975: 48) hesitates between *-*ou̯* and *-*ou̯s*. Lunt almost completely disregards the dual forms in his otherwise very detailed "Sketch history" (a diachronic discussion of OCS phonology and morphology appended to the last edition of his *Old Church Slavonic grammar*). He limits himself to quoting the least controversial athematic and thematic nom.-acc.du. formants, *-*h_1e* (with hesitation) and *-*ō*, respectively, but leaves out of discussion all the other dual case forms (2001: 224). Notice, furthermore, that his athematic *-*h_1e* and thematic *-*ō* could not have been contemporaneous as the latter termination is given in its late, post-laryngeal form.

Some of the uncertainties surrounding the PIE gen.-loc.du. form(s) were actually dispelled quite some time ago. First of all, the PIE ending began with a laryngeal (*-*$h_x$ou̯(s)*), as has been demonstrated by Hoffmann. He observed that Vedic gen.-loc. duals, such as *pitrós* 'of/on fathers', were consistently trisyllabic in the Rig Veda (/pi.tr̥.os/), which could only be due to a laryngeal: **ph₂.tr̥.*$h_x$ou̯s* (Hoffmann 1976: 561, n. 2). The initial laryngeal in the PIE ending is also supported by Germanic evidence. It is the majority opinion that the glide gemination observed in PGmc gen. **twajjō* 'two$_{GEN}$' (whence Go *twaddjē*, ON *tveggja*, OHG *zweiio*, etc.) is one way or another attributable to a laryngeal:[18] thus **twajjō* < PIE **duoi̯-*$h_x$ou̯ (Jasanoff 1978: 83–84; cf. also Lehmann 1952, Lindeman 1964, Rasmussen 1989, etc.).

[17] In positing idiosyncratic *-*o-e*, *-*u-e*, *-*i-e*, etc., Schenker seems to rely on Szemerényi 1996: 185). Otherwise, the PIE preforms are more or less conventionally set up as *-*ah₂-ih₁*, *-*o-h₁(u)* (masc.), *-*o-ih₁* (neut.), *-*u-h₁*, *-*i-h₁*, and consonant-stem *-*h_1e* (cf. Nussbaum 1986: 284–85, who further argues that thematic *-*o-eh₁* cannot be ruled out; cf. also Beekes 1995: 194; Beekes and de Vaan 2001: 216; Malzahn 1999: 205–11, 222–23; etc.). Nussbaum (1986: 284–85) and Malzahn (1999: 210–11, 222–23) do not exclude an athematic (consonant-stem) ending *-*eh₁*.

[18] Traditionally, the proponents of laryngeal-based theories of Holtzmann's law have attributed the gemination (*Verschärfung*) of the Gmc glides *-*ww*- and *-*jj*- to assimilation within PIE sequences of glide + laryngeal or laryngeal + glide. Jasanoff's 1978 account of Holtzmann's law attributes the *Verschärfung* to glide insertion in place of

Evidence for something like *-$h_xo\underset{\cup}{u}s$ with a final *-*s* (but also for *-$h_x\bar{V}s$ < *-h_xe/oh_xs?) comes only from one branch of Indo-European, namely Indo-Iranian:

(4) Skt gen.-loc.du. *padoḥ* 'of/on two feet' < *-$h_xo\underset{\cup}{u}s$;
Skt gen.-loc.du. *bāhvoḥ* 'of/on two arms' < *-*u*-$h_xo\underset{\cup}{u}s$;
Av gen.du. *bāzuuå̊* 'of two arms' < IIr *-*u*-*Hās* < *-*u*-h_xe/oh_xs (?), etc.

In addition, there is the Avestan *s*-less locative dual, cf. *zastaiiō* 'in two hands' (-*ō* < *-$h_xo\underset{\cup}{u}$). The Indo-Iranian evidence seems to necessitate a PIE gen.du. in *-h_xe/oh_xs distinct from a PIE *s*-less loc.du. in *-$h_xo\underset{\cup}{u}$, with both endings surviving as separate case forms in Iranian but merging into a "hybrid" *-$h_xo\underset{\cup}{u}s$ in Indic. Indeed, Malzahn (1999: 219–20) argues along these lines. Other scholars have likewise differentiated between a PIE gen.du. *-h_xe/oh_xs (or *-$h_xo\underset{\cup}{u}s$) and a PIE loc.du. *-$h_xo\underset{\cup}{u}$ (cf. Beekes 1995: 194–95; Mallory and Adams 2006: 57; Szemerényi 1996: 160, 185 with literature; Olander 2015: 205–12 with literature; etc.).

No trace of a separate gen.du. *-h_xe/oh_xs is found anywhere outside Iranian, however. All other daughter traditions, including closely related Indic, as well as Greek (where some relics of the dual category survive), have a syncretic gen.-loc.du. case form. Furthermore, the branches that present more or less clear phonological evidence point to an *s*-less *-$h_xo\underset{\cup}{u}$. Thus, OIr syntagms such as *dá fher* '(of) two men' (with a lenited initial consonant of the second member) show unequivocally that the Proto-Celtic archetype of OIr *dá* had a vocalic outcome: PC *$dwo\underset{\cup}{i}o\underset{\cup}{u}$ (?) < PIE *$du\underset{\cup}{o}\underset{\cup}{i}$-$h_xo\underset{\cup}{u}$ or *$du\underset{\cup}{o}\underset{\cup}{i}$-$h_xe\underset{\cup}{u}$. Compare also the celebrated Lith adverbs *pusiáu* (with a remodeled variant *pusiaũ*) 'in halves' and *dvíejau*[19] 'in twos, as a pair,' cognate of course with OCS *dъvoju* 'in/of-two' < *$du\underset{\cup}{o}\underset{\cup}{i}$-$h_xo\underset{\cup}{u}$ and Skt *dváyoḥ*. I therefore side with those Indo-Europeanists, who have envisaged a PIE *s*-less form, at least in the locative dual (e.g., Szemerényi 1996: 185; Weiss 2009: 209, fn. 17; and, recently, Olander 2015: 206). In any event, regardless of whether PIE possessed a separate genitive dual form or not, for Balto-Slavic and Proto-Slavic one can only posit a single syncretic gen.-loc.du. case in *-$h_xo\underset{\cup}{u}$.

Now that we have established the shape and the function of the pre-Proto-Slavic ending, let us consider the stem variants it yielded in Proto-Slavic

an earlier lost laryngeal: *-AU.HA-* > *-AU.A-* > *-AW.WA-*; *-AI.HA-* > *-AI.A-* > *-AJ.JA-*, "cf. **hawwan* ['hew'] < **hauwan* < **kau̯h$_2$-e/o-*, **wajju-* ['wall'] < **waiju-* < **u̯oi̯h$_x$-* ['wind, twist'])…" (Jasanoff 1978: 87).

[19] The variant *dvíejaus* is very likely an analogical creation; cf. Lith comparative adverbs in *-iaus* existing alongside the textbook adverbs in *-iau*. Lith *pusiáu*, *pusiaũ* 'in halves' and Latv *pušu* 'id.' support an *s*-less preform (Vaillant 1958: 38–39; Forssman 2001a: 133; Forssman 2001b: 146; cf. also Olander 2015: 211).

(by which I mean both apophonic alternations of the stem and nonapophonic stem-suffix alternants such as thematic *-*o*-/*-*oi̯*-).

If one is to trust the evidence of Indic (veritably the most conservative branch of IE), then OCS consonant-stem forms such as *slovesu* 'of/in two words,' *kamenu* 'of/at two rocks,' *dъšteru* 'of/at two daughters,' etc. should reflect the original PIE situation, where the ending *-h_x*oṷ* was attached directly to the stem; cf. Skt *pados* 'of/on two feet' < IIr **pad-Haṷ(s)* < PIE **ped-h_xoṷ*. OCS *dъšteru* (< lPSl **dъ(k)tʼeru*) more or less directly continues PIE **dhugh$_2$tr̥-h_xóṷ*. The only modification that took place on the way to late Proto-Slavic is the analogical replacement of the weak stem **dhugh$_2$tr̥-* with the strong stem **dhugh$_2$ter-* (which is in fact expected considering that Slavic *ter*-nouns have eliminated the week stem in all originally weak case/number forms).

Turning now to the *u*-stem and *i*-stem duals, it is again the Indo-Iranian data that prove to be the most helpful:

(5) Skt gen.-loc.du. *agnyoḥ* [agnioḥ] 'of/in two fires' < IIr **agniHaṷ*,
Skt gen.-loc.du. *sakthyoḥ* [sakt$^{\text{h}}$ioḥ] 'of/on two thighs' < IIr **sakt$^{(h)}$iHaṷ*,
Av gen.du. *haxtiiå* 'of two thighs' < IIr **saktiHaHs*
Skt gen.-loc.du. *sūnvoḥ* [sūnuoḥ] 'of/on two sons' < IIr **sūnuHaṷ*,
Av loc.du. *aŋhuuō* 'in both existences' < IIr **asuHaṷ*, etc.

To judge by the morphology of these forms (< PIE **-i-h_xoṷ*, **-u-h_xoṷ*, **-u-$h_x$oh$_x$s*, etc.), common Indo-Iranian might have generalized elements of the acrostatic and/or hysterokinetic patterns, which were both characterized by a zero-grade stem suffix in the weak case/number forms (cf. acrostatic **h$_1$ógʷ-ni-s* 'fire' → loc.du. **h$_1$égʷ-ni-h_xoṷ*,[20] hysterokinetic **dhugh$_2$-tḗr-(s)* 'daughter' → loc.du. **dhugh$_2$-tr̥-h_xóṷ*). It is also possible that this generalization of a weak stem-suffix to the proterokinetic oblique dual took place already in PIE, where masculine and feminine proterokinetic singulars would have had hysterokinetic duals and plurals (see fn. 23 below).

The Slavic evidence is less straightforward. The shape of the lPSl *ǐ*-stem genitive-locative dual (**ognъju* 'of/in two fires,' **gostъju* 'of/at two guests,' etc.)

[20] The presence of a labiovelar in PIE **h$_1$egʷ-* 'shine; appear' and **h$_1$ógʷ-ni-/*h$_1$égʷ-ni-* 'fire' has been confirmed by Nussbaum's recent identification of **h$_1$e/og$^{\text{w}}$-* in **h$_1$óg$^{(\text{w})}$-ni-/*h$_1$ég$^{(\text{w})}$-ni-* with compositional **-Hgʷ-* in Gk *ἀκρῑβής* 'precise, sharply defined' < **h$_2$(a)k̂ri-Hgʷ(-es)-* and *ἐρυσῑ́βη* 'plant rust' < **h$_1$rud$^{\text{h}}$i-Hgʷ-ah$_2$* (Nussbaum 2012). Note that Nussbaum's etymology rules out the presence of a nasal in the root **h$_1$egʷ-* (contra Derksen 2008: 364).

is consistent both with original acrostatic/hysterokinetic *-*i*-h_x*oṷ* and with expected proterokinetic *-*éi̯*-h_x*oṷ*,[21] as in:

(6) PIE *h_1*égʷ*-*ni*-h_x*oṷ* ← nom.sg. *h_1*ógʷ*-*ni*-*s* 'fire' (acrostatic),
PIE *h_1*ḱoṷ*-*i*-h_x*óṷ* ← nom.sg. *h_1*ḱoṷ*-*ḗ(i̯)*- 'visionary'[22] (hysterokinetic),
PIE *mn̥*-*téi̯*-h_x*oṷ* ← nom.sg. **mén*-*ti*-*s* 'thought' (proterokinetic), etc.

Ŭ-stem forms such as eHSl *synovu* 'of/at two sons' can only go back to ePSl **sūnoṷ(*h_x*)oṷ* with a full-grade suffix. Since in Slavic (as elsewhere in historical IE) the *ĭ*-stem type tends to display parallel ablaut behavior with the *ŭ*-stem type, one can safely posit full-grade stem suffixes for both preforms: *-*eṷ*-h_x*oṷ* and *-*ei̯*-h_x*oṷ*. Indeed, the full-grade suffix *-*ei̯*- in this case/number form has been assumed by many Slavists (see Olander 2015: 207 for literature).

In sum, it appears that while Proto-Indo-Iranian *-*i*-*Haṷ* and *-*u*-*Haṷ* were generalized from acrostatic and hysterokinetic nouns (cf. the top two items in (6)), the model for ePSl *-*ei̯*-h_x*oṷ* and *-*oṷ*-h_x*oṷ* was provided by proterokinetic nouns:

(7) PIE *mn̥*-*téi̯*-h_x*oṷ* ← nom.sg. **mén*-*ti*-*s* 'thought,'
PIE *ĝn̥*-*éṷ*-h_x*oṷ* ← nom.sg. **ĝén*-*u*- 'knee,' etc.[23]

Otherwise, the Slavic forms are unproblematic: they continue familiar PIE preforms.

[21] PIE sequences of the form *-*ei̯V*- famously surface as -*ьjV*- in Slavic, cf. PIE **treiẹs* > OCS *trьje* 'three'.

[22] Cf. OAv *kauuā* 'seer; poet'.

[23] PIE proterokinetic *i*- and *u*-stems are expected (at least theoretically) to have had an accented, full-grade suffix in the genitive-locative dual. On the surface, then, Slavic appears to point to just such a preform (*-*éṷ*-h_x*oṷ*). That said, there is a respectable notion that at the PIE level "it may… be meaningless to speak of proterokinetic inflection at all in the plural," and that "one might just as well say… that masc. and fem. proterokinetic singulars have hysterokinetic plurals" (Nussbaum 1986: 280–81; cf. also Kümmel 2014: 164 and Olander 2015: 207, 209). Whether PIE proterokinetic nouns were inflected hysterokinetically also in the dual is hard to tell. The IIr forms with an invariant *ø*-grade suffix (gen.du. *-*i*-*Haṷ*, *-*u*-*Haṷ*, dat.-abl.-inst.du. *-*i*-*bhi̯aH*-, *-*u*-*bhi̯aH*-), put together with Sl dat.-inst.du. -*ъma*, -*ъma*, may indeed tip the scale in favor a PIE "mixed" paradigm—a proterokinetic singular combined with a hysterokinetic dual and plural. It is therefore not impossible, and perhaps even likely, that Sl -*ovu* is *not* a direct continuation of an actual PIE proterokinetic dual *-*éṷ*-h_x*oṷ*, and that the source of *-*eṷ*- > -*ov*- is to be sought elsewhere (the proterokinetic gen.sg. ending *-*éṷ*-*s* would be among plausible candidates).

A lot of uncertainty surrounds the original shape of the *o*-stem genitive-locative dual. In various treatments of PIE grammar one often encounters a question mark or a blank in the relevant slot of the paradigm. I would submit that, based on Indo-Iranian and Homeric Greek evidence, given in (8) and (9), a PIE **-oi̯-hₓou̯* is a reasonably safe reconstruction:

(8) Skt *vṛ́káyoḥ* 'of/on two wolves' < PIE **u̯l̥kʷ-oi̯-hₓou̯*
Skt *áśvayoḥ* 'of/on two horses' < PIE **h₁ek̂u̯-oi̯-hₓou̯*
Skt *hástayoḥ* 'of/in two hands' < PIE **ĝʰost-oi̯-hₓou̯*
Av *zastaiiō* 'in two hands' < PIE **ĝʰost-oi̯-hₓou̯*

The **-oi̯-* in these forms originated in the pronominal declension, cf. Skt *táyoḥ*, OCS *toju* < PIE **toi̯-hₓou̯* and Skt *dváyoḥ*, Lith *dvíejau*, OCS *dъvoju* < PIE **d(u)u̯oi̯-hₓou̯*.

The thematic gen.-dat.(-loc.)du. marker in Homeric Greek is *-οιιν* (*-oi̯.i̯in*):

(9) Gk. *λύκοιιν* 'of/on two wolves' < PIE **u̯l̥kʷ-oi̯-*
Gk. *ἵπποιιν* 'of/on two horses' < PIE **h₁ek̂u̯-oi̯-*
Gk. *ὤμοιιν* 'of/on two shoulders' < PIE **hₓōm-(e)s-oi̯-*

Greek *-οιιν*, probably remodeled after thematic dat.(-loc.)pl. *-οισι(ν)*, is compatible with an original **-oi̯-hₓou̯*. Note also Arcadian *o*-stem/athematic *-οινν* and *ā*-stem *-αινν*, *-αινς* (Dubois 1977: 175), as well as Myc *-ou* in *du-wo-u-pi* = *δύϝου-φι* 'two$_{GEN.DAT}$' (1977: 180), which look tantalizingly close to the gen.-loc.du. preform advocated here (more on this below). The ending itself aside, it may be said that, at the very least, the shape of *-οιιν* lends credence to the notion of the pronominal suffix **-oi̯-* having intruded into this form already in PIE (consider the shape of *τοῖιν* and *δυοῖν*, which continue, *mutatis mutandis*, PIE **toi̯hₓou̯* and **d(u)u̯oi̯hₓou̯*). The presence at the PIE level of **-oi̯-* and **-u* in both the locative plural and dual could have set off a series of partial levelings (remodelings) between the plural and the dual locative terminations in Pre-Greek. The sequence of changes may be envisioned as follows (instances of analogical influence and their directionality are marked with arrows):

(10)	stage I (PIE)	loc.pl.	*-o̯i̯-su*	gen.-loc.du.	*-o̯i̯-h_xo̯u̯*
	stage II (du. remodeled after pl.)		*-o̯i̯-su*	→	*-o̯i̯-h_xu*
	stage III (-*s*- > -*h*-; -*i̯h_x*- > -*i̯i̯*-[24])		*-o̯i̯hu*		*-o̯i̯i̯u* > Arc *-οιυν*
	stage IV (remodeled after dat.pl.)		*-o̯i̯hi*		
	stage V (new round of remodeling)		*-o̯i̯hi(n)*[25]	→	*-o̯i̯i̯i(n)* > Hom *-οιιν*

Arc *-οιυν* is usually viewed as late and uninformative of earlier stages of the Greek dual.[26] I am tempted to regard it as a more archaic form than HomGk *-οιιν* (stage III vs. stage V in (10)). It is hard not to see in the *-u-* of Arc *-οιυν* a reshaped *u*-diphthong of *-h_xo̯u̯*, especially in light of the fact that original diphthongal *-h_xo̯u̯* is otherwise attested in this dialect, surviving in an adverbial. It underlies the *-ουν* of Arc *ἰμ μέσουν* (= Hom *ἐν μέσον*) 'in between,' which is directly relatable to *-h_xo̯u̯* of Indo-Iranian and Slavic, cf. OCS *meždu* 'idem' < PSl **medju* (Dubois 1977: 175–76; Weiss 2009: 210).

Let us sum up. Arc *-ουν* (in *μέσουν*) directly continues PIE *-h_xo̯u̯*, whereas Arc *-οιυν* and Myc *-ou* (in *du-ϝo-u-*) reflect it indirectly (*-o̯i̯-h_xo̯u̯ >> -o̯i̯u- > -ou*). The agreement between Indo-Iranian and Greek, both containing *-o̯i̯-*, is

[24] The reliance on the sound change *Vi̯HV > Vi̯i̯V* may be perceived as a weakness of the proposed scenario. Such a change has never been conclusively demonstrated for Proto-Greek. It may perhaps be independently observed in HomGk *δοιοί* 'in two (ways), twofold' and HomGk indecl. *δοιώ* 'two' (both from PIE gen.-loc. **du̯oi̯-h_x*-?). In addition, a number of scholars have taken the Arcadian 1.sg.opt. *-οια* (cf. Arc *ἐξελάννοια* 'I would drive out') from PIE *-o̯i̯h_1m̥* (thus, e.g., Rix 1992: 262; see also 61, 72, 74–75, where a case is made for a change *iH > i̯i̯*). To be sure, there is counter-evidence to an intervocalic *i̯* being retained in the vicinity of a laryngeal. Myc *du-ϝo-u-pi = δύϝο[*ι]υ-φι* seems to have lost the intervocalic sequence *i̯h_x* (< PIE **d(u)u̯o̯i̯-h_xo̯u̯* (**b^hi*)). On the other hand, it remains unclear whether the Linear B syllabary actually included a character for *-ju-* (sign *65?). Another frequently cited counterexample is HomGk impf. *δέατο* 'seemed, appeared' < **de̯i̯$h_2$to* (this one may not count, though, because the laryngeal in this form was vocalic). As for the Arcadian thematic optative in *-οια*, there is an alternative and admittedly more attractive view of the original shape of the suffix, namely *-*o.ih*$_1$-. In short, it is quite possible that *-i̯i̯-* in stage III *-o̯i̯i̯u* has to have a nonphonological explanation.

[25] It is widely held that *-*oihi*, not *-*oisi(n)*, was the original shape of this ending in late Proto-Greek and early historical Greek (cf. Myc *-o-i* = /-oihi/). The intervocalic *-s-* in the post-Mycenaean dialects (early Att *-οισι*, etc.) has been restored (thus, e.g., Rix 1976: 140; Sihler 1995: 263–64).

[26] The Arcadian dual ending has been directly equated with PIE thematic locative plural *-o̯i̯su* (Weiss 2009: 210). Its *-u-* has been taken to result from "dissimilation" within the allegedly earlier *-o̯i̯i̯in* (Rix 1976: 141), etc.

impressive. These Arcadian and Mycenaean data and the agreement between Indo-Iranian and Greek in featuring *-*oi̯*-, along with the very early attestation of the two branches, make a PIE thematic *-*oi̯-hxou̯* our safest bet.

Following the lead of Indo-Iranian, Beekes (1995: 195) and Beekes and de Vaan (2001: 217) settle—though not without hesitation—on a PIE gen.-loc.du. *-*oi̯-hxou̯*. For Szemerényi, on the other hand, it is not Indo-Iranian but rather Slavic that represents "the original state of affairs" (OCS *vlъku* < PIE *-*o-ou̯s*), whereas the "worth" of the Indo-Iranian evidence (Skt *vr̥káyoḥ* < PIE *-*oi̯-ou̯s*) is compromised by an intrusive *-*oi̯*- coming "from the numeral 'two' and the pronouns" (Szemerényi 1996: 185; cf. also his thematic dual paradigm on p. 186). This choice made by the author of the influential *Einführung* has come to dominate the field of Slavic historical linguistics, hence the *-*ŏ-ou̯s* of Schenker (1993: 87), the *-*ōu̯s* of Townsend and Janda (1996: 143), and the *-*āu̯* < *-*o-hxou̯* of Olander (2015: 211–12).

Pronominal *-*oi̯*- inserted into a nominal thematic form does not necessarily bespeak its post-PIE date. Suffice it to recall that the same insertion is observed in the PIE thematic loc.pl. form *-*oi̯-su* (Skt *vr̥keṣu*, OCS *vlъcěxъ*, Gk *λύκοισιν*) and possibly in thematic inst.pl. *-*ōi̯s* (Skt *vr̥kais*, Lith *vilkaĩs*), if the latter does go back to early PIE **-*oi̯-is* as has been argued by Jasanoff (2009). It is obvious that the thematic plural paradigm was open to the analogical influence of the pronominal plural stem **toi̯*- as early as in PIE, and the trend continued into the post-PIE lives of some of the daughters, hence Ved and GAv thematic dat.-abl.pl. *-ebhyaḥ* and *-aēbiiā*, respectively, both reflecting *-*oi̯-bʰi̯os*.

Let us now transpose PIE **u̯l̥kʷ-oi̯-hxou̯* into Slavic. It would have given lPSl **vъlkoju* 'of/at two wolves' (matching Skt *vr̥káyoḥ*). PIE **h3orbʰ-oi̯-hxou̯* would have yielded lPSl **orboju* (> OCS **raboju*) 'of/at two servants,' etc. No such forms are attested anywhere in historical Slavic. One has to reckon with the possibility that the original thematic ending *-*oju* might have been ousted by the *-*u* of other noun classes.

The PIE *ā*-stem dual paradigm is even more recalcitrant. Based on the concurrent Indo-Iranian and Slavic data, the direct case ending is more or less safely reconstructible as *-*ah2-ih1*, hence Skt *séne* 'two armies' < IIr **sain-ah2-ih1*, OCS *rǫcě* 'two hands' < **ronk-ah2-ih1*, Skt *te*, OCS *tě* 'those (fem.)' < **tah2-ih1*, etc. In its origin, the form *-*ah2-ih1* seems to be a "dualized" neuter plural (i.e., collective) in *-*ah2* (Jay Jasanoff, p.c.).

The gen.-loc. affix is more problematic. Schenker's *-*ā-ou̯s* (1993: 87), Townsend and Janda's (contracted) *-*āus* (1996: 143), and Olander's *-*ah2-hxou̯* (2015: 210–11) correctly predict the eHSl reflex *-u* (OCS *rǫku*, *nogu*, OR *ruku*, *nogu*, etc.). One has to bear in mind, however, that this form in *-u* is more than 2000 years younger than its Vedic counterpart *-ayoḥ*. The archetype of eHSl *-u*, arrived at mechanically, i.e., by way of undoing the prehistoric sound changes, may be a mere *transponate*—a form that need not have existed in this shape in the protolanguage. As has been surmised by some authorities, there

is a chance that the Slavic gen.-loc.du. affix *-u* is intrusive in the *ā*-declension. Szemerényi (1996: 190) suggests it was imported from the thematic class (lPSl **vъlku*, **orbu*, etc.). Recall, however, that *-u* may well be an intruder in this thematic class as well. If the PIE thematic gen.-loc.du. termination was indeed **-oi̯-hₓou̯*, then consonant-stem **-hₓou̯* looks like a better candidate for the source of *-u* in *both* the *ā*-stem and the *o*-stem declensions.

Let us now consider the older and more reliable Indo-Iranian data. The starting point for IIr *ā*-stem gen.-loc.du. **-ai̯(H)au̯* (> Skt *-ayoḥ*, Av *-aiiō*) could only have been a composite ending **-ah₂-ih₁-hₓou̯*, containing the above-mentioned "dualized" nom.-acc.du. collective form in **-ah₂-ih₁* further extended with the gen.-loc.du. marker **-hₓou̯*. Such a composite **-ah₂ih₁hₓou̯* would have been subject to an inner-PIE phonological rule which reduced sequences of the form *-AHIHA-* to *-AIHA-* —the so-called *AHIHA* rule (Jasanoff 1994: 161, fn. 21; Jasanoff 2003: 109). Thus, IIr **sain-a(h₂)ih₁hₓau̯* 'of/in two armies' > **sainai̯h₁hₓau̯* > **sainai̯au̯(s)* > Skt *sénayoḥ*.[27]

Transposing the complex termination **-a(h₂)i̯h₁hₓou̯* into Slavic, one would expect a lPSl **-oju*: PIE **ronka(h₂)i̯h₁hₓou̯* > lPSl **rǫkoju*. The Slavic *ā*-stem ending would thus have been no different from the theoretically expected *o*-stem ending: a lPSl **-oju* to match Skt *-ayoḥ* found in both the thematic class and the *ā*-stem class.

The actually attested eHSl forms are, of course, OCS *o*-stem *vlъk-u* and *ā*-stem *rǫk-u* (OR *vъlk-u*, *ruk-u*).

4. Origin of (S)WSl *-ū*

If the reconstructions in section 3 are correct, the (S)ESl thematic and *ā*-stem ending *-u* cannot be the direct descendant of the PIE preforms (**-oi̯hₓou̯* and **-ai̯h₁hₓou̯*, respectively). They would both would have yielded eHSl **-oju* rather than *-u*. The actual form *-u* should then be viewed as resulting from interparadigmatic leveling.

Consonant-stem nouns may have been responsible for the rise of the synchronic eHSl pattern, whereby the gen.-loc.du. marker *-u* is affixed directly to the root-final consonant of a truncated, formerly vocalic stem: thus OCS *rǫk(a)-* 'hand' → *rǫk-u*, *vlъk(o)-* 'wolf' → *vlъk-u*, etc., to match *kamen-* 'rock' → *kamen-u*, *sloves-* 'word' → *sloves-u*, etc. This change would have occurred when the old vocalic stem suffixes **-ā-*, **-ŏ-*, **-ĭ-*, **-ŭ-*, etc., had largely merged with the case endings: thus, *o*-stem acc.sg. ROOT-*o-m* > ROOT-*ъ*, loc.sg. ROOT-*o-ï* > ROOT-*ě*, dat.pl. ROOT-*o-mъ* > ROOT-*omъ*, *ā*-stem inst.pl. ROOT-*a-mi* > ROOT-*ami*, etc. Already in late Proto-Slavic this led to the rise of a uniform bimorphemic

[27] Cf. also the *ā*-stem inst.sg. forms in Sanskrit (*sénayā* < IIr **sain-a(h₂)-ih₂-ah₁*) and OCS (*rǫkojǫ* < **-ojō* + **-m(i)*, where **-ojō* is derivable from **-a(h₂)-i̯h₂-oh₁*) (Jasanoff 1994: 161, fn. 21).

structure of the case form ('STEM(=ROOT)+ENDING') across all vocalic stem types (formerly of the structure ROOT+SUFFIX+ENDING): **vъlk-ъ*, **vъlc-ě*, **vъlk-omъ*, **rǫk-ami*, **sloves-e*, **sloves-ъmъ*, **sloves-y*, etc. (see (3) and fn. 2). In short, the nominal stem was now perceived as consonantal by default and often identical with the root (**vъlk-*, **rǫk-*, **slov-es-*, etc.). The following analogical proportion might then have been at play: **sloves-* : **sloves-u* :: **vъlk-* : *x*, where *x* was resolved as **vъlk-u*.

The spread of **-u* at the expense of **-oju* would have taken place only in the eastern half of the late Proto-Slavic dialect continuum. On the western margins of the late Proto-Slavic area—in the dialects that would later give rise to West and South-West Slavic—the ending **-oju* would have persisted:

(11)	stem type	lPSl (W, SW)	lPSl (E, SE)	
	ŏ-stems	****vъlk-oju***	**vъlk-u*	'of/on two wolves'
	ā-stems	****rǭk-oju***	**rǭk-u*	'of/in two hands'
	cons. stems	**dъ(k)t'er-u*	**dъ(k)t'er-u*	'of/at two daughters'
	ū-stems	**lok-ъv-u*	**lok-ъv-u*	'of/in two waterholes'
	ŭ-stems	**sȳn-ov-u*	**sȳn-ov-u*	'of/at two sons'
	ĭ-stems	**gost-ьj-u*	**gost-ьj-u*	'of/at two guests'

We are now in a position to return to the principal question of this study: what is the origin of the gen.-loc.du. formant *-ū* in West and South-West Slavic? The unattested but expected ending **-oju* may lie behind (S)WSl **-ū* surfacing as BCS *-ū*, Slk. *-ú*, Cz *-ú* > *-ou*, Pol *-ū* > *-u*, etc.

(12) lPSl **vъlkoju* > (S)WSl **vl̥kū*,
lPSl **rǭkoju* > (S)WSl **rǭkū*

Already in the preliterary period the long allomorph of the gen.-loc.du. ending **-ŭ̄* became generalized in (S)WSl dialects to all stem types:

(13)	stem type	I. early (S)WSl	II. contraction	III. generalization of length
	ŏ-stems	**vъlk-oju*	**vl̥k-ū*	**vl̥k-ū*
	ā-stems	**rǭk-oju*	**rǭk-ū*	**rǭk-ū*
	cons. stems	**dъ(k)t'er-u*	**dъt'er-u*	**dъt'er-ū*
	ū-stems	**smok-ъv-u*	**smok-ъv-u*	**smok-ъv-ū*
	ŭ-stems	**sȳn-ov-u*	**sȳn-ov-u*	**sȳn-ov-ū*
	ĭ-stems	**gost-ьj-u*	**gost-ьj-u*	**gost-ьj-ū*

A phonological development *-*oju* > *-*ou* > *-*ū* would not have been unprecedented in (South-)West Slavic. It would have been yet another instance of a larger phenomenon, a series of changes one may label the "early (S)WSl vowel contraction." The proposed change:

(14) gen.-loc.du. *r̥̄koju > WSl *r̥̆kū > OCz *rukú* > Cz *rukou*,
OPol *røkū* > Pol *ręku*

would be comparable to—though perhaps not everywhere contemporaneous with—the prehistoric contraction in the *ā*-stem inst.sg. marker observed in several (S)WSl languages, including Czech and Polish, and to other similar contractions in that dialect area:

(15) inst.sg. *r̥̄kojǫ > WSl *r̥̆kǭ > OCz *rukú* > Cz *rukou*,
OPol *røkō* > Pol *ręką*

Compare also:

(16) PSl **dъvoju* 'of/in two' > OCz *dvú* > Cz *dvou* vs. eHSl *dъvoju*

The hypothesis advanced here thus crucially depends on an early—preliterary—contraction of the posited ending *-*oju* in West and South-West Slavic. The facts are consistent with such an early contraction. It is precisely the (south-)western dialect areas of late Proto-Slavic and early historical Slavic that show a pronounced tendency for an early loss of intervocalic **j*. The process had affected many different environments even before the arrival of literacy in those areas, and as a result already at the very beginning of their written histories the (S)WSl languages displayed an advanced degree of assimilation and coalescence of vowels over the resultant hiatuses. In his large-scale study of prehistoric Slavic contraction, Marvan labels Czech, Polish, Slovene, BCS, etc., "group A" or the "contraction languages," whereas the rest of Slavic, namely Bulgarian, Russian, Ukrainian [and Belarusian], belong to "group B," or the "noncontraction languages" (Marvan 1979: 20–23).[28]

The loss of **j* and the concomitant vowel contraction in medieval Slavic are notoriously difficult to pinpoint in place and time. It was a very gradual

[28] Of course one has to qualify Marvan's designation "noncontraction languages" by acknowledging some early instances of contraction even in the eastern half of the Slavic dialect continuum, including OCS (cf. occasional OCS spellings such as *xotěše* for *xotěaše* 'want$_{3SG.IMPF}$', *dobra(a)go* for *dobrajego* 'good$_{GEN.SG.M}$', *dělaatъ* for *dělajetъ* 'does,' and even *prěbyvate* for *prěbyvajete* 'tarry$_{2PL}$'). Andersen 2014 discusses three instances of contraction that had occurred already within Proto-Slavic, including *-*eję-* > *-*ī-* of the *i*-verbs and *-*ějax-* > *-*ěax-* of the imperfect (if spellings such as *sъmějaše* 'dare$_{IMPF.3SG}$' do indeed reflect an archaism vis-à-vis standard textbook *sъměaše*).

and multifaceted process, a series of changes, which occurred over several centuries, slowly affecting more and more environments and forms within an individual language system, while at the same time steadily expanding outwards, encompassing more and more West and South-West Slavic dialects. According to Marvan (1979: 164), contraction in (South-)West Slavic was actualized gradually, spanning the period from the middle of the 9th c. to the late 13th c.

The resulting picture is predictably messy. A gradual sound change is bound to produce synchronic inconsistencies—both across dialects and even within a single system—and that is precisely what one finds when inspecting the (S)WSl data.[29] On the one hand, we have examples of fully carried out prehistoric contractions, such as the Czech and Polish feminine instrumental singulars in (15) and the definite adjective forms in (17):

(17)	nom.-acc.sg. neut.	OCz *dobré*	OPol *dobrē*	< PSl **dobroje*
	gen.sg. masc.	OCz *dobrého*	OPol *dobrēgo*	< PSl **dobrajego*
	acc.sg. fem.	OCz *dobrú*	OPol *dobrǭ* [ą]	< PSl **dobrǫjǫ*

Cf. also lexical items such as **pojasъ* 'belt,' **stojati* 'to stand' or **bojati sę* 'to fear':

(18) OCz *pás* 'belt,' *státi* 'to stand,' *stál* 'stood,' *báti se* 'to fear,' *bál se* 'feared'
Pol *pas*, OPol *stācz*, *stāl*, *bācz szø*, *bāl szø* (representing Lesser Polish dialects)[30]

On the other hand, in the (S)WSl dialects outside Czech and Southern (Lesser) Polish, one finds contraction applying much less consistently, and a diversity of outcomes when it does apply. Cz *pás*, Sln *pás*, Pol *pas*, and Čak/Kajk BCS *pâs* 'belt' correspond to uncontracted Štok BCS *pòjas* and dialectal GPol *pojas*. This is a consistent pattern: Greater Polish and other northern dialects have retained multiple other uncontracted forms, including *bojać się*, *bojał się*[31] (LPol *bać się*, *bał się*); uncontracted forms also abound in Old Polish manuscripts of northern provenance: cf. *bogely* = *bojali (się)* in *Kazania gnieźnieńskie* (Stieber 1973: 29).

[29] As an example, in Czech one finds *znáš* < **znaješi* 'know$_{2SG}$,' but *laješ* 'chastise$_{2SG}$' < **laješi* (inf. *láti* < **lajati*). Notice that the phonological environments are exactly the same.

[30] The grapheme ø stood for either of the two nasal vowel phonemes of 13th–16th c. Polish: /ą̄/ and /ą̆/. To differentiate between the two phonemes, some medieval Polish authors, most notably Jakub Parkosz, spelled the long phoneme as *øø*.

[31] In dialects of Greater Poland (Kujawy, Łęczyca, Mazovia) as well as in Kashubian (Stieber 1973: 29).

Farther north-west of Greater Poland, in West Lechitic (Polabian), the picture is even less consistent. Contrast the following Polabian data set:

(19)	*zojąc* (*sogans*, *sojangss*)	< **zajęcъ*	'hare'
	pojąk (*pogang*, *pojanck*, *pojunc*)	< **pajǫkъ*	'spider'
	düjocě (*dyotse*)	< **dъvojačьjь*	'twofold'
	vütědojimě (*wittedoyime*)	< **otъdajemy*	'let go, forgive$_{1PL}$'
	znojis (*znoÿs*, *snogis*)	< **znaješi*	'know$_{2SG}$'
	znojě (*znoye*)	< **znaje(tь)*	'know$_{3SG}$'
	stüjě (*stühe*)	< **stoji(tь)*	'stand$_{3SG}$'
		(Suprun 1987: 80–87; Bernštejn 1968: 24–25)	

with the following Polabian forms:

(20)	*stot*	< **stojati*	'to stand'
	bet	< **bojati (sę)*	'to be afraid'
	vüt våisükăg	< **otъ vysokajego*	'from above'
	mauckǫ	< **mļčьkojǫ*	'silently, in secret'
	så månǫ	< **sъ mъnojǫ*	'with me'
	så tăbǫ	< **sъ tobojǫ*	'with you'
	så săbǫ	< **sъ sobojǫ*	'with oneself'
		(Suprun 1987: 62, 65; Polański 1993: 810, 813)	

Especially striking are cases of sporadic application of the contraction rule in exactly identical environments, e.g., the 3sg. of the *ajǫ*-verbs: *d'olojě* / *d'olă* 'works' < **dělaje*; *komojě* / *komă* 'comes, *kommt*' (a German borrowing); *von'ojě* / *von'ă* 'dwells, *wohnt*' (another loan from German); *pěslausă* 'listens' (Russ. *poslušaet*), etc. (Suprun 1987: 54, 68–69). To sum up the Polabian situation, "like some other Slavonic languages, Polabian tended to contract vowels separated by *j*, for example, **bojěti* > *bet* 'to be afraid'… **podъ zemjejǫ* > *püd zimă* 'under the earth'. But the contraction of vowels was not an absolute rule: compare *d'olă* / *d'olojě* (< **dělajetъ*) 'works,' *kǫsojě* (< **kǫsajetъ*) 'bites,' *svaitojě* (< **svitajetъ*) 'it dawns, day is breaking'" (Polański 1993: 803).

When contraction did apply in dialects outside the Czech, West Slovak, and Lesser Polish areas, there are indications that it applied independently from, and more recently than, in Czech, West Slovak, and Lesser Polish (which accounts for the diversity of outcomes of contraction alluded to above). One may recall OPol *dobrē*, Cz *dobré* in (17), as well as W and NW Slk *dobré*, and con-

trast those forms with BCS *dòbrō* and the various Central Slk outcomes *dobró*, *dobrụo*, *dobrva*, and *dobrja* < PSl **dobroje* (Pauliny 1963: 85–86).

Another famous example is the *ā*-stem instrumental singular. In Czech, West Slovak, and Polish contraction took place in prehistoric times and preceded the denasalization of **ǫ* and **ę* (as in (15) above). In Central Slovak, at least in this ending, the loss of *j* applied *after* denasalization:

(21) PSl **rǭkojǫ* > **rǫ̆kǭ* > OPol *rękō* > Pol *ręką*,
> **rǫ̆kǭ* > OCz *rukú* > Cz *rukou*, vs.
> **rǫ̆koju* > Slk *rukou*
(Pauliny 1963: 97–100; Krajčovič 1975: 43–44)

In SW Slavic we have a similar rule ordering mismatch between, on the one hand, Slovene and most Čakavian dialects (which pattern with Czech and West Slovak) and South-East Čakavian and Štokavian, on the other (which pattern with Central Slovak):

(22) PSl **ženojǫ* > **ženǭ* > Sln *ženo*,
> Čak *ženú*,
> **ženoju* > OŠtok *ženọu* (spelled **женовь**)
(Belić 1965: 40–42)[32]

The picture outlined above is that of wave theory-style diffusion of an innovation out of a central area where it started, weakening as it moves away from the center. It is usually held that the center of this innovation (loss of intervocalic **j*) lay somewhere in the Czech area (Marvan 1979; Sussex and Cubberley 2006: 135) or in a more general Czech/Slovak area (Stieber 1973: 30). For the period immediately preceding the arrival of literacy in Central Europe, one should probably think in terms of a somewhat larger area comprising Czech, West Slovak, and, perhaps, also parts of Southern (Lesser) Polish and Northern Slovene, to which we will presently turn.

[32] Belić reconstructed the Slovene, Kajkavian, and West Čakavian reflex as **-ǭ*, whence Sln *-o*, WČak *-u(n)* (*rȉbu*, *ženú*, etc., or *ženún*, *krȁvūn*, etc. < **-ǭ* + **-mь*). Belić reconstructed the Štokavian and South Čakavian reflex as **-oǫ* > *-oụ* ("already in the 10th c."), whence OŠtok. *-ovъ* [*-ow*], ModSČak *-ôv*, e.g., *rukôv* (1965: 40–41, 42). In other words, denasalization took place after the loss of intervocalic *j*, thus **-ojǫ* > **-oǫ* > *-oụ*. It is quite conceivable, however, that denasalization occurred in Štokavian and South Čakavian *before* the loss of intervocalic *j*, thus **-ojǫ* > **-oju* > *-oụ* (cf., e.g., Kapović 2005b: 76, fn. 7: **ženojǫ̀* > **ženoj̀u* > *ženõv* >> *ženõm* > *žènom*). This trajectory would match exactly the development in Central Slovak (on the latter, see Krajčovič 1975: 43). Incidentally, the intermediate stage **-oju* seems to be attested in the North Čakavian Baška inscription (ca. 1100): *běše vъ tъ dni Mikula vъ Otočъci* [*sъ s*]*vetuju luciju vъ edino* 'in those days [the parish of St.] Nicholas in Otočac was one with [the parish of] St. Lucia' (*svetuju* for *svetoju*?).

The question of the chronology of contraction is no less difficult to answer. Andersen (2014) has placed its earliest instances within the late Proto-Slavic period (see fn. 28), but it is not clear whether his—very early—examples should indeed be viewed as the beginning of what he terms "the Common Slavic vowel contraction drift" (2014: 55, 61).[33] In any event, even a more conservative (i.e., more recent) estimate than that of Andersen's would suit our purposes. Marvan (1979) was arguably not too far off the mark when he placed the beginning of contraction on the western periphery of Slavic in the 9th century. This is hard to verify as we do not have textual evidence of West Slavic from before the 13th century (if one elects to disregard the Moravian Glagolitic manuscripts). However, we are lucky to have a very early text written in a South-West Slavic dialect. The Old Slovenian Freising Fragments (dated to the late 10th century) feature contractions of the kind that lend credence to the hypothesis in (12–14):[34]

(23) **volejǫ* > *vuolu* (I 14) 'out of (free) will,'

**tojǫ velikojǫ strastьjǫ* > *to vuelico strastiu* (II 107–08) 'with that great passion'

**našejǫ pravьdьnojǫ věrojǫ* > *nafu praudnu vuerun* (II 104–05) 'by our holy faith,'

**prijьměte věčьnoje veselьje* > *primete vuecſne vuezelie* (I 34) 'obtain eternal joy'

**mojego* > *mega* (I 18, 33) 'my$_{GEN.SG.MASC}$'

Already by the 10th c., then, at least in some dialects of Slovene, **-oje-* > *-ē-* and **-ejǫ*, **-ojǫ* > *-ō* or *-ū* (extended with an *-n* in *vuerun*, a form strongly reminiscent of the NČak fem.inst. in *-ūn*; see fn. 32). These contractions are strikingly similar to the corresponding Czech and West Slovak ones. It therefore stands to reason that the process of contraction started out somewhere in Pannonia, ultimately affecting the adjacent areas of Caranthania/Carinthia to the south and Southern Moravia to the north (most likely, no later than at the turn of the 9th and 10th c.).

Now let us finally turn to the unexpected shortening of the root vowels in BCS *rùkū*, *slùgū*, *vràtū*, and *pȅtū* (vs. nom.sg. *rúka* 'hand', *slúga* 'servant', *vráta* 'two-leaved doors', *péta* 'heel'), which earlier theories leave unaddressed. The shortness of the root vowel in **rǫ̆kū* in Czech and Polish is expected: both

[33] Two of Andersen's examples are not uncontroversial (the *vòlja*-type nouns < ePSl ***woleja* (?) and the imperfect suffix **-ăax-* < ***-ějax-* (?)). The third example (**-eję-* > **-ī-*) should not be regarded as part of the same lPSl round of the loss of intervocalic *-j-*. It belongs to a much deeper—common Balto-Slavic—time period.

[34] For more examples and a detailed discussion, see Marvan 1999.

stressed and pretonic long circumflexes in disyllabic forms of type-*c* nouns undergo shortening in West Slavic. However, such shortening is not supposed to occur in BCS, hence the following quantitative relationships:

(24)	**tȇlo* (AP *c*) 'body'	>	Cz *tělo*	(short)	vs. BCS *tijȇlo, têlo*	(long)
	**zīmā́* (AP *c*) 'winter'	>	Cz/Slk *zima*	(short)	vs. BCS *zíma*	(long)
	**zi̇̀mō* 'winter$_{ACC}$'	>	Cz/Slk *zimu*	(short)	vs. BCS *zîmu*	(long)
	**rǭkā́* (AP *c*) 'hand'	>	Cz/Slk *ruka*	(short)	vs. BCS *rúka*	(long)
	**rǫ̀̄kǭ̄* 'hand$_{ACC}$'	>	Cz/Slk *ruku*	(short)	vs. BCS *rûku*	(long)

The short root vowel in BCS disyllabic *rùkū* (AP *c*) is thus unexpected. The same can be said of *slùgū* (AP *b*). Long vowels in pretonic syllables in type-*b* nouns tend to retain length in both BCS and West Slavic, hence:

(25)	**trāvā́* (AP *b*) 'grass'	>	Cz/Slk *tráva*, Pol dial. *tråwa*, BCS *tráva*
	**mǭ̄kā́* (AP *b*) 'flour'	>	Cz *mouka*, Slk *múka*, Pol *mąka*, BCS *múka*

But if BCS *rùkū*, as it is argued here, indeed goes back to **rǭkojù*, and BCS *slùgū* continues **slūgòju*, a simple and elegant explanation of the root vowel shortening comes for free as a corollary of the proposed theory. In BCS, the historically long nonacute root vowels in word forms of three syllables (and more) were subject to a very old shortening rule as seen in the following examples:

(26)	*prâse* 'piglet'	→	*prȁseta* 'piglet$_{PL}$'
	grâd 'city'	→	*grȁdovi* 'city$_{PL}$'
	tráva 'grass'	→	*tràvica* 'grass$_{DIMIN}$'
	ljûdi 'people'	→	*ljùdina* 'a giant person'

In other words, the shortening in *rùkū* (a diachronic trisyllable **rǭkoju*) is explained in the same way as the shortening in the inst.pl. *rùkama* (a synchronic trisyllable). The root vowel shortening observed in *rùkū* and *slùgū* makes virtually inescapable the conclusion that these forms used to be trisyllabic, which lends plausibility to the theory advanced in this paper.[35]

[35] That the short root vowel in forms like BCS *rùkū* "points to a contraction in the desinence" has been suspected by a couple of scholars, including Kortlandt, who, however, did not see it fit "to base any conclusions" on the form (Kortlandt 1975: 48). As already mentioned, Stang (1957) wondered whether gen.-loc.du. **golvù* was the correct late Proto-Slavic reconstruction "as Slovincian *-ū* may go back to *-oju*." OR *nogú*

The proposed account of (S)WSl *-*ū* comes at a cost: Cz *rukou*, *nohou*, BCS *rùkū*, *nȍgū*, etc., on the one hand, and OCS *rǫku*, *nogu*, OR *ruku*, *nogu*, etc., on the other, turn out to be *Scheingleichungen*: BCS *nȍgū* continues lPSl **nogoju*, OR *nogu* goes back to lPSl **nogu* with a generalized (consonant-stem?) ending *-u* < **-h*$_x$*oų̯*. Observe, however, that the stress patterns of BCS *nȍgū* and OR *nogú*[36] are irreconcilable in any case.

Appendix: The Fate of the *ǐ*-Stem Classes in Historical Slavic

The masculine *ǐ*-stems have completely lost their identity as a separate class within the history of the individual Slavic languages. They have joined the historical *jo*-declension and now comprise a subset of the "soft" variant of the historical *o*-stem class. Thus, in any variety of modern East Slavic the paradigm of the masculine "soft"-stem subclass is typically an amalgam of historical *jo*-, *jā*-, and *u*-stem endings, on which the former *ǐ*-declension has left no impact. The sole exception is the genitive plural ending in *-ej* < **-ьjь* (indeed, a historical *ǐ*-stem form), found in a subset of Russian and Ukrainian masculine "soft"-stem nouns. However, this is not an instance of an *ǐ*-stem case marker being analogically extended to the *jo*-stem paradigm. When *-ej* was spreading at the expense of *-ø* and *-ev*, these three gen.pl. endings no longer represented three distinct noun classes (stems in *-ǐ-*, *-jo-*, and *-u-*). Rather, they were competing allomorphs within a single, recently formed, masculine "soft"-stem class.[37]

Turning to feminine *ǐ*-stems, these do persist as a separate noun class in East Slavic and the other Slavic languages that have retained case. Yet feminine *ǐ*-stem nouns have not exerted any influence on the other declensions

ultimately confirmed for Stang the correctness of a PSl *-*u̯* (Stang 1957: 63). Stang did not explain the shape that he chose for his alternative PSl ending *-*oju*. One wonders whether he might have had in mind the pronominal gen.-loc.du. in *-oju*, as Sadnik (1959: 50, fn. 150) clearly did, deriving BCS *-ū* in *nȍgū*, *rùkū*, etc., from "pronominal *-oju*." Her position thus differs from the one advocated here, namely that PSl *-*oju* was a *nominal* ending expected from the PIE preforms *-*oi̯h$_x$ou̯* and *-*ai̯h$_1$h$_x$ou̯*. Sadnik's scenario has been used by Kapović to explain the Czech data (see section 1 above).

[36] As attested in Čudovskij Novyj Zavet (mid-15th c.), the oldest accented Old Russian manuscript.

[37] As mentioned above, the masculine *jo*-stem class had by then completely absorbed the *ǐ*-stem class, and all former *ǐ*-stem masculine nouns (save for Rus *put'* 'path') had come to attach the historical *jo*-stem case markers. In the genitive plural, however, three case markers, including *-ej* (former *ǐ*-declension) and *-ø* (former *jo*-declension), continued to compete. The allomorph *-ej* was ultimately selected over *-ø* in most "soft"-stem nouns in keeping with the robust universal preference for one-to-one form/function mapping (form/function isomorphism), and with the pronounced crosslinguistic tendency to avoid zero marking on a functionally marked member of the paradigm.

in East Slavic, and not much elsewhere. Thus, in West Slavic (Polish, Czech, and Slovak), *ĭ*-stem case forms have been recessive and have tended to be supplanted by more productive allomorphs extracted mostly from the *jā*-declension (in the feminine) and the *jo*-declension (in the masculine).[38] In Czech dialects there are even instances of historical *ĭ*-stem feminine nouns switching to the *jā*-stem type completely, e.g., *pěsňa* 'song' (<< PSl **pěsnъ*).[39] Likewise, in the history of BCS practically no influence of the *ĭ*-stems on other noun classes—masculine or feminine—is detectable (for a discussion of older BCS case forms and their regional variants, in particular in the *(j)o-* and *(j)ā*-stems, see Belić 1965: 8–16, 36–42). What is more, in Čakavian dialects the feminine *ĭ*-stem nouns tend to coalesce almost entirely with the *(j)ā*-declension. The innovated BCS instrumental in *-i(j)ōm* (cf. Štok dial. *kȍšćōm*), the dative-locative in *-i* (Čak *kostȉ*), the as well as the innovative Čakavian plural case forms such as *kostán*, *kostȁmi*, *kostȁh* have served as pivot forms (1965: 50–52).

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[38] In Czech and Slovak *jā*-stem case forms have ousted multiple *ĭ*-stem case forms: cf. OCz gen.sg./nom.-acc.pl. *kostě* like *jā*-stem *dušě*, dat.pl. *kostiem* like *dušiem*, loc. pl. *kostiech* like *dušiech*, inst.pl. *kostěmi* like *dušěmi*, etc. (Trávníček 1935: 314, 327). Cf. also *jā*-stems endings in historical *ĭ*-stem nouns in Modern Czech: gen.sg./nom.-acc. pl. *dlaně*, dat.pl. *dlaním*, inst.pl. *dlaněmi*, loc.pl. *dlaních*, etc. Similarly, in Slovak: gen.sg. *dlane*, nom.-acc.pl. *dlane*, dat.pl. *dlaniam*, *kostiam*, inst.pl. *dlaňami*, *kosťami*, loc.pl. *dlaniach*, *kosťach*. The same directionality of analogical replacement—*jā*- and *jo*-stem forms supplanting *ĭ*-stem forms—is observed in Polish (nom.-acc.pl. *noce*, dat.pl. *kościom*, *nocom*; inst.pl. *nocami*, *kościami* [beside *kośćmi*]; loc.pl. *kościach*, *nocach*) and East Slavic (Rus *kostjam*, *nočam*; *kostjami*, *nočami*; *kostjax*, *nočax*).

[39] Cf. also Cz dial. *smrťa* 'death,' *labuťa* 'swan,' *obruča* 'hoop, ring,' etc. For more examples of the *jā*-stems influencing the *ĭ*-stems in Czech and Slovak, see, e.g., Trávníček 1935: 325, 327–29 and Seliščev 1941: 123, 130–31.

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