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THE PROGRESSIVE PALATALIZATION

OF COMMON SLAVIC

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Editor: BLAŽE KONESKI

PREFACE

It is generally taught that the *c* and *з* in such words as *otьcь* 'father', *srьdьce* 'heart', *ovьca* 'sheep' and *kъnęзь* 'prince' of Old Church Slavonic – and, by implication, of all Slavic dialects of the 9th-10th centuries – developed from **k* and **g* by progressive palatalization at the very end of the prehistorical period, in the 7th-9th centuries. In this study I analyze the evidence, both external and internal, that scholars have adduced in support of this late dating. I demonstrate that the putative external evidence (place-names and loan-words) is irrelevant. This means that in studying the progressive palatalization and related problems we are free to examine the data of OCS and other pertinent Slavic linguistic evidence unconstrained by the need to cope with the alleged fact that the change was late. The internal evidence leads me to conclude that the progressive palatalization was not late: on the contrary, it was one of the first changes which clearly set a late Indo-European dialect, Pre-Slavic, apart from even its closest relative, Pre-Baltic. Thus, Proto-Slavic from the beginning was characterized by a tendency to palatalize consonants.

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This historical study grew directly out of my continuing efforts to describe OCS as a synchronic linguistic system and to study it in terms of its origin and development. My major conclusions are, I believe, completely independent of the particular theoretical frameworks I have experimented with, and in the body of the essay which follows I have couched my definitions of the problems and the discussion of competing solutions in fairly neutral terms. Insofar as possible, distracting questions of detail and minor points of disagreement on methodology have been relegated to the notes. However, my conclusions were reached within one specific theoretical framework and thus, I submit,

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constitute evidence of the value of this approach. Therefore I include, chiefly in the form of notes, the major hypotheses and procedures I followed. They are, on the whole, those set forth in *The Sound Pattern of English,* by Noam Chomsky and Morris Halle, 1968.

Since Ferdinand de Saussure, linguists have agreed that the synchronic description of a linguistic system and the history of that system are two different topics. However, views as to the nature of the synchronic *état de langue* have varied and still vary greatly. I have described the phonology and morphology of OCS from two different points of view. In the early 1950's I used the concepts and procedures of what is now called, somewhat too narrowly, structuralism, my own version being strongly influenced by my tutelage under, and association with, Roman Jakobson. This description was published in my *OCS Grammar* (1954, with slight revisions and corrections in subsequent editions). A very different description, in terms of generative phonology, was written in 1972 and appended to the 6th edition (1974) as an Epilogue. It was the process of comparing these two synchronic descriptions of a single system and considering the implications for discussing the history of that system that led me to question traditional views about the progressive palatalization, among other problems.

It the early 1950's it was generally agreed that a linguistic description must treat separately two subdivisions of the sound system, phonemics and morphophonemics; then it should deal, again separately, with morphology and word-formation, while syntax and vocabulary could be put off for subsequent study. The phonological building-blocks were envisioned as segments observable in the stream of speech, units easily recognized by a speaker who takes the time to think a bit about his language. Phonetic realism was emphasized, although when pressed most analysts had to admit some degree of abstraction in defining the phoneme.

[I shall call this the *phonemicist* position, intending the term very generally to refer to "one of the variants of neo-Bloomfieldian and/or Prague linguistics as formulated ca. 1950", including my own description of OCS (and of Macedonian). As a generative phonologist, however, I still consider myself a structuralist (despite the sometimes pejorative overtone of that term in some recent usage), for generative phonology is, I maintain, even more concerned with the totality of relationships among various parts of a synchronic linguistic system than were (or are) phonemicists. Indeed, one of the greatest disadvantages of phonemicist descriptions is the atomism that results from dispersing the treatment of related processes among various sections on phonetics, morphophonemics, and several subdivisions of morphology: invariants are lost among lists of variations.]

Linguists from Pāṇini to Bloomfield had expressed the intuition that abstract underlying or "basic" forms had enormous explanatory power in describing the working of a language, for they provide an invariant that underlies systematic variation. Yet it was tabu for a phonemicist to recognize as "basic" a form that could not be, so to speak, seen. For example, one had to describe the synonymous OCS possessive adjectives *pilaštъ* and *pilatovъ* 'Pilate's' in terms of consonant-mutation alone. A formula like *pilat-j-ъ*, plus a rule *tj > št*, was impermissible for me in 1954. One postulated two stems, *pilašt-/pilat-*, and listed the occurrences (before "soft" desinences / most other cases).

Generative phonology offered a solution, by postulating that a speaker knows his language in a way that is not bounded by actual phonetic output. Thus one may assume that an OCS speaker had as part of his knowledge of his language two synonymous suffixes, *-j-* and *-au-*, plus a series of rules of combination. Thus the underlying representations *pīlāt-j-y* and *pīlāt-au-y* would suffice, with the effects of the rules, to produce surface *pilaštъ* and *pilatovъ*. This view accepts that relationships within a single linguistic system can be at the same time historical and synchronic. No one denies that lexical elements which demostrably have entered a language at widely different epochs now function as synchronic units of the system; surely, in similar fashion, certain phonological and syntactic rules of combination that are synchronically in force also had their origin at different moments in time.

Since my OCS Epilogue went to press in 1972, certain details of my views about the plausible underlying units, and therefore about the status of some of the rules, have changed. These matters are taken up in notes.

The analytical procedure of both generative phonologists and most traditional linguistic historians seeks to establish the underlying units and processes of combination which account for the observable forms of a language systematically. There are two major differences between generative analysis and internal reconstruction. First, the generativist assumes that he is exposing the workings of a synchronic linguistic system which constitutes part of the knowledge of a speaker of that language; the historian assumes he is revealing successive stages which were properties of successive past *états de langue* and also the processes of change from one stage to the next. Second – a direct corollary of the basic assumptions – the generativist (and the phonemicist) excludes from consideration all data presumed not to be known to the average speaker of a language: there is no utilization of historical information and no comparison to related dialects. The historian seeks any kind of data which might possibly be pertinent – contemporary related dialects, and all sorts of earlier records of the given dialect and all presumably related forms of the language group.

History requires the comparison of different stages: we must know what it is that we are examining with regard to historical development. Since the phonemicist defines a linguistic system chiefly in terms of units assumed to be only mild abstractions from the observable phonetic data, the history of the language must be the history of surface changes. Thus, for example, the OCS infinitive *vesti,* corresponding to 3rd singular present *vezetъ,* is taken at face value. Descriptively, the *z* is said to alternate with *s;* historically, one might imagine an earlier stage with **veztī* or **veztei,* but comparison with other Indo-European dialects indicates that a cluster *zt* was generally unknown, so **vestei* would seem most likely. Russian *v'estī'ī* merely continues the old form with general phonetic innovations, while Ukrainian *vezty* is declared to be a local innovation, by analogy with the *vez-* in other forms of the paradigm. The generativist, however, will have no hesitation at positing *wez-tei* as the underlying form for all Common Slavic dialects until the monophthongization of **ei* to **ī,* whereupon the underlying form remains /wez-ti/ for most Slavic dialects up to the present. The history of the assimilation rule which requires phonetic *st* must also be accounted for; on the whole I would hazard that it applied, with sometimes broader and sometimes narrower specifications, in most of Slavic from the beginning to the present. Only in Ukrainian was the *rule* lost: underlying Ukr. /wez-ty/ (the exact specification of the vowels is a complex problem I am not facing here) simply is subject to no assimilation rule. In short, historical development includes both changes in underlying-forms and changes in rules.

Phonological units are now generally agreed by phonemicists and generativists alike to be based on distinctive features, and both theories accept Jakobson's doctrine that phonological change is best expressed as change in distinctive features. The precise nature of distinctive features, however, is still extremely controversial, and several competing arrays have been proposed. Each has its strong points, but none has yet proved to be infallible. It seems clear, however, that solutions to problems either of synchronic description or historical change which are crucially dependent on one and only one array of features are of dubious value. I have found that for most purposes of Slavic linguistics the Halle–Chomsky features of SPE are fully adequate, if one adds the feature /labial/, as Halle has done in his own work. The SPE features are well-known and I utilize them here, as I did in my OCS Epilogue. I am taking it for granted that every reader will understand that statements of the type *k* > *č* are merely convenient shorthand notations for the more accurate but space-consuming (and difficult to read) formulas specifying the distinctive features. The full formulation is basic, however, and I use it in the text or notes when the most important questions are treated.

I have made no use of markedness, for none of the theoretical suggestions which go beyond notions advanced by Jakobson seem to me to be well founded. In particular, the notions of markedness neutralization, markedness reversal and markedness assimilation, as they have been used without constraint in recent papers on Slavic historical linguistics, are so powerful as to be meaningless.

* * *

Theories come and go, but the linguistic data remain. It is impossible for every linguist to seek out all the information in the primary sources, but it is vital to remember that materials in textbooks and handbooks have already been sifted and classed in very specific ways. Unfortunately, some of the most imposing handbooks turn out to be the least reliable. Yet even in reading the better works, one must always be aware of the overt hypotheses and methods underlying the selection and arrangement of data and, moreover, must keep alert to possible hidden biases and unrecognized assumptions. What is most important is that every bit of data which might be pertinent to a given problem should be examined, and every effort should be made to increase the data base. Troublesome items which interfere with the neat patterns one wishes to find can be minimized, but they should never be omitted.

* * *

A major barrier to precision in Slavic historical linguistics is the carelessness of earlier scholars in citing their sources. Until very recently, despite the efforts of Leskien, Diels, and a few others, it was common to label any medieval form "Old Church Slavonic" and equally common to treat hypothetical reconstructions exactly like attested forms from the oldest manuscripts. This meant a blurring of both regional and historical differences among the early manuscripts, and made it difficult indeed to sift out facts from hypotheses, to attempt to find regional and historical differences in phonology, morphology, and lexicon. We know that dialects which have existed side by side for centuries have preserved different archaisms and developed different innovations, and we must assume that variation of many different sorts existed at every stage of every group of Slavic dialects. If there is to be any hope of reconstructing history accurately, we must be meticulous about citing sources carefully and stating our hypotheses as to the meaning and value of the sources. Unfortunately, these precepts appear to be unknown to some of our colleagues even today. All too frequently OCS data are compared to Old Czech or Old Slovenian, as if of equal weight. Yet our oldest Czech that furnishes reasonably full, reliable and systematic data comes from after about 1350, at the very least three centuries removed from attested OCS

and four and a half centuries from the hypothetical but reliable normalized system we can reconstruct with confidence. And Slovenian cannot really be analyzed in any detail until the second half of the sixteenth century. Of course we can speculate on the shape of any dialect in the vast Slavic area during any period we choose; what is important is that we label such discussion as speculation, and that we remain aware that we are not talking about OCS. Even our cleverest guess-work cannot stand on an equal footing with attested materials.

Finally, we must not forget that every dialect is an extremely complex structure. We can find patterns and regularities, but there are always exceptions and anomalies. It is unrealistic to attempt to prove that the dialects which are only imperfectly preserved in writing, or those about whose very existence we can only guess, were ideal systems, free from irregularities and idiosyncratic oddities. No "explanation" of historical development will ever handle all the details.

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An earlier version of this essay appeared in *Indo-European Studies III*, edited by Calvert Watkins (Department of Linguistics, Harvard University, 1977), and a brief Russian outline was published in *Slovansko jezikoslovje: Nahtigalov Zbornik* (ed. France Jakopin, Ljubljana, 1977). I have had the opportunity to discuss the questions treated here with many students and scholars, and have benefited substantially from their criticism and advice. I am particularly grateful to Jay Jasanoff, Jochem Schindler, and Calvert Watkins for their gracious help in matters well beyond my own competence in Indo-European. František Mareš, Alan Timberlake, and Henry Kučera have aided greatly by detailed criticism and commentary based on their expertise in Slavic linguistics. Morris Halle offered invaluable suggestions concerning both form and content. My thanks go to them all, as well as to others who provided important information and encouragement. The infelicities, inaccuracies and misinterpretations which remain are, of course, my own fault.

May 5, 1978   Horace G. Lunt

However, the recent literature made me realize how much scholarly views about the relationship and distribution of the open vowels ě and a in OCS – and generally in Slavic – are at variance, and how crucial specific hypotheses about these vowels can be in deciding key questions of historical phonology, including palatalization. Therefore I have given an explicit summary of my own views of the question in an Addendum, even though the same information is to be found in various notes.

The notes are intended as a running commentary on the text, and I regret that it was technically impossible to set them as footnotes. I strongly urge readers to make the effort to read them in order along with the text.

June 22, 1981   HGL

The late Indoeuropean dialects which gave rise to Baltic and Slavic presumably had a simple obstruent system consisting of four pairs of stops (*p/b t/d ḱ/ǵ k/g*) and a single fricative (*s*, with a rare variant *z*). Early in the history of Baltic and Slavic, **s* split into two units, one presumably apical **s* and the other probably a dorsal   I will symbolize as **X*, very likely varying from palatal to velar articulation. At approximately this time, **ḱ/*ǵ* ceased to be stops. In Baltic, **ḱ* and **X* merged as palatal **š* (with some exceptions), while **ǵ* became **ž*.[1] In Slavic, **ḱ* fell together with old **s* and **ǵ* became **z*.[2] The unit **X* probably remained distinct for some time, later splitting into **š* and **x*, both of which were involved in complicated alternations with **s* whereby the three units were sometimes interchanged.

Old Church Slavonic provides our earliest reliable data for any kind of Slavic.[3] It shows, in addition to the stops and fricatives listed above (*p/b t/d k/g; s/z š x*) a set of affricates traditionally transcribed *c/ʒ*, a palatal affricate *č*, and the voiced fricative *ž*.[4] Further, the combinations *št/žd* function as morphophonemic units and for the purposes of this discussion we will consider them functionally as stops and symbolize them as **tj/*dj*.[5]

The *č* and the *ž* (which alternates with *g*) are, as everyone agrees, the historical reflexes of **k/*g* followed by a front vowel or iod at a relatively early stage in the development of Slavic; let us symbolize this regressive palatalization as KI. The same formula gave rise to some instances of *c/ʒ* in a second regressive palatalization we may symbolize as KAI.[6]

The other instances of *c/ʒ* result from **k/*g* in a complex environment that, for purposes of discussion, we tentatively formulate: $Cǐ(N) \_ å$. That is, the velar must be followed by a low back vowel and at the same time preceded by a high front vowel (which may be followed by a nasal) that is itself preceded by a consonant.[7] Thus **raikå* does not fit, but **mesinkå* and **awikå* do; hence OCS *rěka* 'river', but *měsęca* 'moon (G sg)' and *ovьca* 'sheep'.

These examples show that the palatalizing factor stood before the velar so that this is a PROgressive palatalization, a fact pointed out first by the Polish scholar Jan Baudouin de Courtenay. Other than the conclusion that it produced hissing affricates *c/z̆*, everything about the BdC palatalization is controversial: its progressive nature, the exact formula, the examples that can properly be used as proof, and the chronology – both relative and absolute.

Long ago Antoine Meillet and various other scholars, operating with a method of analysis now generally called internal reconstruction, concluded that BdC was older than KAI. Using essentially the same method in an effort to analyze the synchronic system of Old Church Slavonic, I reached the same conclusion (see the Epilogue in *Gram.*). Further, the material forced me to place BdC early in the ordered set of synchronic generative rules, well before KI. My work was strongly influenced by suggestions Theodore Lightner and Morris Halle put forward in the early 1960's.[8] Robert Channon, working in 1965 with a set of rules obtained from Halle, argued that indeed not only the generative, but the historical order must be BdC, KI, KAI; his essay, somewhat revised, was published in 1972. Channon's arguments were not fully convincing,[9] and I was ready to believe that the descriptive priority of BdC in my own analyses was an artifact of the method, resulting in part because data from outside OCS were rigorously excluded from consideration and, perhaps, partly from some characteristic of the formal apparatus.[10] An attempt to separate history from synchronic description, however, at once revealed such a welter of disagreement in the literature about questions of fact and theory that a large–scale revision was called for. It is worth examining the assumptions and data used by scholars of all persuasions to see how completely different conclusions are reached.[11]

My own view, as I stated in the preface, is generative. I maintain that the phonology of many languages (surely including all Slavic dialects) implies the operation of a number of ordered rules, some quite complex, that affect the underlying representations.[12] Other languages can adequately be handled with underlying representations that are very close to the actual pronunciation (Haitian Creole, for example, apparently requires morphophonemic statements only for purely "grammatical words"). Historical changes, I submit, introduce more and more rules until the underlying forms are too far from the surface and rules too cumbersome;[13] then underlying representations change so that they approximate surface forms closely and the process begins anew.

My 1974 analysis of OCS aimed for a maximally simple phonological inventory. I was striving to show that the synchronic phonological system underlying the surface phonemics of OCS did not contain any affricates or other results of either iotation or the three palatalizations (KI,

KAI, BdC), but that *c* and *ʒ*, along with *č* and the other palatals, were generated by synchronic rules. However I now feel that this was false economy. The position of BdC in my proposed system of rules is precarious, the rule itself being overburdened by morphological constraints and exceptions. Therefore I would now posit as full members of the underlying set of phonemes the *k* and *ǵ* which resulted from BdC. In this view, BdC is a historical process which is finished; it is not a synchronic rule of OCS.[14] Further, the *č, ž*, and *š* resulting from KI also belong in the underlying structure, occuring in roots, but the KI–rule itself remains to generate surface *č/ž/š* from underlying *k/g/x* at morpheme boundaries.[15] The results of KAI are be generated by rule; the replacement of *ć/g* by *k/ʒ* before front vowel is still a productive process.[16]

Much of the difficulty about the nature of the formula for BdC was caused by views of phonetics, usually not explicitly formulated, that have been outmoded by the work of Trubetzkoy, Jakobson, and many others. It is now clear that the merger of IE *ŏ* and *ă* produced a simple vowel system that endured until the 8th or 9th century. The features high, back and long (or tense?) fully define eight units, *ī i, ē e; ȳ y, ā a* (which resulted in the late Common Slavic or OCS units usually noted *i ь, ě e; y ъ, a o*) plus *ei, au, ai* (perhaps *eu*) and diphthongs ending in *N, l* and *r*.[17]

BdC has long been recognized to be at least in part a morphological problem, for a reason that is obvious but seems not to have been stated explicitly: the *k/g* involved in the complex formula is ALWAYS the last element of a morpheme, whether root or suffix, that is followed in different forms by phonological segments that differ according to the appropriate derivational or inflectional sets of suffixes. This means that the velar always stands precisely in the position most subject to variation. The suffixes *-ьk-* and *-ynj-(i)* furnish convincing proof that BdC is blocked by *ȳ* after the *k/g*. The adjective *lьgьk-* 'light, easy' and noun *lьgynji* 'lightening, relief' reflect *lig-yk-* and *lig-ȳnj-ī*, but *polьʒa* 'use' if from *pa-lig-ā* with this same root, shows palatalization.[18] Similarly, *kъnęgynji* 'princess' (by chance not attested in OCS) but *kъnęʒ-* 'prince' from *kyning-ȳnj-ī* vs. *kyning-* plus a set of desinences, some of which indubitably contained *ă*. Discussions of the pre-history of OCS are likely to take up palatalizations in one chapter and morphology in another, with little or no attention to the constant interaction which must exist at every stage. Since OCS has *-ъ* in N sg m and *-y* in I pl, forms of the type *atiky, atikȳ* are posited; the expected OCS forms "otъkъ" and "otъky" are declared to be out of place beside G *otьca* and I *otьcеmь* and the like, and therefore, the argument runs, they were replaced "by analogy".[19]

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Yet internal reconstruction alone suffices to establish a stage where every desinence in the OCS twofold declension begins with *a or *ā. A number of variant proposals may be made if one includes information derived from the IE o-, yo-, ā- and yā-stem endings in other languages, but nothing changes the major fact: all desinences begin with a low back vowel.

(There is of course one exception, the masculine vocative *-e. With velar stems, this *-e fulfils the KI formula.[20] It is crucial to recognize that BdC and KI are mutually exclusive: BdC requires a low back vowel; KI requires a front vowel. This means that there is no obvious way to establish which came first.[21])

Table I offers sample declensions of the forerunners of OCS otьcь 'father', srьdьce 'heart' and ovьca 'sheep'.[22]

The conclusion is obvious: BdC took place REGULARLY in paradigms like these.[23] No forms contained unshifted velars which needed "therapeutic" replacement. Any restructuring of the *o-/*yo- or *ā-/ *yā- paradigms which took place earlier than BdC maintained the crucial low back vowel; later substitutions of desinences in all sorts of Slavic dialects took place after the *k̑/*g̑ or their reflexes were firmly in place in stems.

Great controversy has surrounded the definition of the part of the BdC formula preceding the velar. Short *i seems clear from equations like Skr. avikā́ and OCS ovьca 'sheep', Lith. vainikas and OCS věnьcь 'wreath, crown'.[24] Long *ī is less easy to document. It is generally assumed for the widely productive suffix –ica, thus *-īkā. Among the diverse uses of this suffix is the designation of females where there is a correlated noun for the male. Sometimes the feminine is clearly derived from the masculine (e.g. prorokъ 'prophet', proročica; vladyka 'ruler', vladyčica), but often a different masculine suffix occurs. Most common is *-ьc-(ь): e.g. telьcь m, telica f 'calf'; črьnьcь 'monk', črьnica 'nun'; starьcь 'old man', starica 'old woman'.[25] There are a few cases derived from a past passive participle. Here masculine –ik–(ъ) occurs: mǫčenikъ 'martyr', mǫčenica; učenikъ 'disciple', učenica.[26] Far more common and obviously productive are words built on the adjectival formant -ьn- plus –ik– or –ic-, such as grěšьnikъ and grěšьnica 'sinner', cf. grěšьnъ 'sinful', grěxъ 'sin'. It is sure that –k– underlies all these suffixes, but the relationships are not fully clear. One thing is certain: we need not demand that the masculine and feminine forms be fully parallel.

Scholars already convinced that BdC is a late change, very much subject to morphological levelling, apparently assume that we are dealing with earlier *-īk-ā and *-īk-aS, i.e. a single suffix used for both genders, and that it is essentially arbitrary that the end–products differ

TABLE I

	Proto-Slavic			OCS		
N	*atikaS	*sirdikaN¹	*awikā	otьcь	srъdьce	ovьca
A	*atikaN	*sirdikaN¹	*awikāN	(=G)	srъdьce	ovьcǫ
G	*atikā(D)	*sirdikā(D)	*awikā(D)	otьca	srъdьca	ovьcę
L	*atikai	*sirdikai	*awikai	otьci	srъdьci	ovьci
D	*atikau²	*sirdikau²	*awikai	otьcu	srъdьcu	ovьci
I	*atikami	*sirdikami	*awikaiāN	otьcemь	srъdьcemь	ovьcejǫ
V	*atike		*awika	otьče		ovьce
NA	*atikā	*sirdikai	*awikai	otьca	srъdьci	ovьci
GL	*atikau	*sirdikau	*awikau	otьcu	srъdьcu	ovьcu
DI	*atikamā	*sirdikamā	*awikāma	otьcema	srъdьcema	ovьcama
N	*atikaiS⁴	*sirdikā	*awikaNS	otьci	srъdьca	ovьcę
A	*atikaNS	*sirdikā	*awikaNS	otьcę	srъdьca	ovьcę
G	*atikaS⁵	*sirdikaS⁵	*awikaS⁵	otьcь	srъdьcь	ovьcь
L	*atikaixy	*sirdikaixy	*awikāxy	otьcixъ	srъdьcixъ	ovьcaxъ
D	*atikamy	*sirdikamy	*awikāmy	otьcemъ	srъdьcemъ	ovьcamъ
I	*atikāS⁶	*sirdikaS	*awikāmī	otьci	srъdьci	ovьcami

Notes. 1. NA neut sg *-om > Sl. *-aN was very likely replaced by *-a from the pronoun *ta(D) < *tod; in either case the desinence begins with a low back vowel.
2. Older D sg may have been *-ai < *-ōi.
3. I sg f *-aiaN is surely from the pronominal declension, perhaps for older *-āN< *-ām; in either case the desinence begins with a low back vowel.
4. The *S in N pl m represents my suggestion that this PSl desinence represents a blend of pronominal *-oi (cf. Lat., Gk.) and the -s of all other masculine and feminine stem-types. I submit that this segment *S is a more likely motivation for the special development of this desinence to i (not *-ai > -ě/-i as in L sg) than the dubious accentual conditioning that is often invoked (Meillet 1934 § 168, but cf. his doubts, § 159), cf. *Gram.* pp. 152-3.
5. G pl *-aS is a possible late replacement for *-aN < *-om; in either case, the desinence begins with a low back vowel.
6. I pl *-aS is my suggestion for the ancestor of OCS -y/-i; its connection with hypothetical IE *ōis is unclear.

as –ica but –ikъ.²⁷ However both *-ik-ā and *-ik-aS yielded c (–ьca and –ьcь): why should putative *-īkaS alone have been resistant to BdC?

It is important to look carefully at the attestation in our oldest manuscripts. The feminine –ica is widespread, with several functions, but the masculine –ikъ, though common, is strictly limited to the suffix –ьnik–, plus mǫčenik–, učenik–, krъmljenik–, and, outside the strict OCS canon, beside more usual ljubljenikъ 'beloved', ljubimikъ 'beloved' with the present instead of past passive participle in the stem. The Lat-

vian suffix –*niek-(s)*, presumably from older *–*neik–as,* whether it is a genetic parallel or a borrowing from an early East Slavic dialect,[28] suggests motivation for the unshifted velar.[29] We therefore set up *–*ineik–aS* vs. *–*inīk–ā* and hypothesize that the diphthong *ei blocks BdC.

There is one OCS masculine in –*icь: korabljicь,* with the doublet *korabicь* (perhaps to be read *korabjicь?*), reflecting the doublet in the base form *korabljь/korabь* (or *korabjь?*). Following Meillet (and Vaillant 1974 298, 541), we can see here a combining of the ancient **y–* of the *yo–stems with the **īk–* suffix to form *–*īk–: *karābj–ik–as > *karābīkaS.* It is tempting to see a straight–forward development to *korabicь,* but the comparative patterns from SC – much later, to be sure – indicate rather that the diminutive suffix –*ic–* was combined with the iotized base of the synchronic system of OCS.[30] Therefore the alternants here are merely examples of the usual variation – presence or absence of the epenthetic *l* – that surely reflects different Bulgaro–Macedonian dialects of the 9th–11th c.

In post-OCS East Slavic the suffix -*ik-* became productive without a preceding -*n-,* but since in any case BdC is older than OCS, there is no need to "explain" such a form as the oft–cited *starikъ,* attested for the first time just before 1400. Surely this replacement of *starec (< starьcь)* by *starik* was influenced by the form *starica.*[31] It is characteristic of Slavic, as opposed to Baltic, that *k*-suffixes (including of course those with *c* and *č*) have been extraordinarily productive. They have proliferated in different ways in different Slavic dialects, however, and material from diverse areas should not be juxtaposed without careful analysis of the individual systems.

'Gold-piece' is called for in OCS only in the Suprasliensis, and there beside eleven instances of *zlatica* we find a lone *zlatikъ.* Otherwise, *zlatьnikъ* is clearly normal and widely attested (cf. *sьrebrьnikъ* 'piece of silver'; -*ica* in early Rusian[32] texts as well). I regard *zlatikъ* as a simple spelling error of Supr.[33]

The adjective *velikъ* 'big' clearly is derived from the obsolescent *velii = *velьj-ь < *welej-aS* and thus represents **welei-k-.* The -*lik-* of *tolikъ* 'so big', *kolikъ* 'how big' *selikъ* 'this big' and *jelikъ* 'that big' is surely from **lei-k-* (Meillet 1905 329). These formations demonstrate the blocking force of *ei and strengthen the hypothesis that *-*ineik-aS* is to be opposed to *-*inīk-ā.* The noun *rěka* 'river' surely represents *raikā and the rare *otъlěkъ* 'remainder' is from *-*laik- < *loikʷ*; both affirm that diphthongs block BdC.

The only non-derived noun in -*ce* is *lice* 'face, visage, person', which surely represents *līk-a and the regular action of BdC. The word is well attested in OCS and in most modern dialects. Old derivatives are

obličьje 'face, look, aspect, image' (OCS; cf. *oboč ь je* 'temple' < **ab-ak-ij-: oko* 'eye'; 1073), *naličьje* 'outer surface of face' (1073), and the obsolescent indeclinable adjectives *različь* 'different' (OCS) and *sьličь* (adv. 'κατὰ ταὐτόν'in 1073), replaced by *-ličьnъ*. *Lice* obviously had a legal sense 'evidence, (visible) proof' (cf. the definitions given by Sławski s.v. *lice;* compare also Eng. 'on the face of it' and 'prima facie'), which forms the basis of the OCS verb *obliči+/obličaj+* 'expose, confront, accuse'. From this early network of derivatives containing *-č-* before front-vowel suffixes, post-OCS dialects created a new noun *lik* 'form, shape, aspect', along with *óblik, prilík, prilíka* and others (including in Macedonian even *liko* and *lika* 'face'), cf. Vaillant 1974 210.[34] Despite Vasmer and others, I see no reason for not accepting, with Vaillant 1958a 236, that *lice* represents a borrowing from a Germanic neuter, cf. Gothic *leik* 'body, flesh'. It is possible that the concrete sense of the Germanic noun developed from a meaning 'visible shape, form': compare the Gothic adj. *galeiks* 'similar' and *sьličь(nъ)*. In any case, the comparative evidence is far too weak to posit **ei,* and *lice* can be taken as a regular product of BdC; *lik* is post-OCS by several generations and is thus not a conterexample.[35]

One stem containing what is plausibly an inherited diphthong is often cited as an illustration of BdC (e.g. Shevelov 339): the adjective *trizъ* 'three-year-old', compared to its Lithuanian semantic equivalent *treigỹs (*-iyo-*stem, G *treigio).* The equation is inexact. The Slavic evidence is unambiguous that the OCS form must have been **trizъ* with ordinary *z,* presumably from IE **ǵ(h),* and not the putative "*triзъ*".[36] What needs accounting for is not "*з*", but a much older contrast **treig(h)-ij-* vs. **treiǵ(h)-.* Whether the **g(h)* and **ǵ(h)* are to be interpreted as two different suffixal elements or one is not important here;[37] in any case this word and its parallel **dvizъ* (Lith. *dveigỹs)* 'two-year-old' have nothing to do with BdC.[38]

The phonetic explanation for the blocking effect of **ei* and **ai* on BdC is uncertain; one expects the high front quality of **i* in **eika* and **aika* to be about the same as in **Cika.* Proto-Slavic **ei* and **ai* are hypothesized chiefly on the basis of Baltic and other IE information, and any proposal as to the details of the course of monophthongization to **ī* and **ē* (OCS *i, ě)* is of necessity pure speculation, constrained only by typological considerations. That **ai* first became **aę* before merging with **ē* is quite possible (cf. Avestan or Latin).[39] This would block BdC in N **raekā* (> OCS *rěka)* without setting up KAI in DL **raekae,* which only later became **rěkē > OCS rěcě.*[40] As for **ei,* its eventual merger with **ī* argues against assuming a significantly lowered second element in the later period, but perhaps in early Slavic – precisely the time con-

cerned for our hypothesis – phonetic *ę* existed. Such a sequence would be phonologically /ei/ as long as the second element was higher than the first and phonetic contrast with /ě/ was maintained. Roman Jakobson, in his Columbia lectures as early as 1947, suggested a meta-thesis to *ie, similar to that in Baltic (cf. Gk. χεῖμα, Lith. *žiemà,* Latv. *ziema,* OCS *zima* 'winter'). Plausible though metathesis is as a possible stage intermediate between the original diphthongs and eventual monophthongization,[41] there is no independent evidence to support it in this prehistoric period, and the suggestion is justified only to bolster the conclusion that BdC is late. I do not accept it. In view of the indeterminacy of the stages intermediate between diphthongal *ei/*ai and OCS monophthongs, I shall continue to write the familiar sequences *ei and *ai and exclude the diphthongs from BdC by specifying Cǐ in the formula.[42]

A series of plant-names in *-ika,* such as R. *klubníka,* 'strawberries', is often cited to establish an ancient suffix *īk-á that escaped BdC, though *-īk-á otherwise (and in some botanical terms as well) did become *-ica.* Yet recent comprehensive lists (cf. Jeżowa 1975), impressively long and covering the whole Slavic world, fail to provide convincing evidence that even one of these terms can be ascribed to all (or most) Slavic dialects in, say, the 8th century. Unfortunately, few of these botanical names appear in medieval sources, but it is clear that various groups of Slavs have been independently inventive in bestowing names on plants, particularly plants that have some economic value. For example, besides the *brusníka* and *brusníca* Jeżowa cites for 'whortleberry (Vaccinium vitis idaea)' is the *brusníga* treated by Vendina and also, in Russian alone: *brúska, brusíca, brusёna, brusёnja, brusёna, brusёnka, brušníca, brusnína, brusincy* and *brusník* (Filin). This same edible berry also has a series of other names (e. g. Polish *borówki*).[43] There is no possible way to demonstrate that this "botanical suffix" goes back to an early Slavic morpheme *-īk-(á)*; it is merely one more illustration of the proliferation of *k*-suffixes in the Slavic world.[44] I submit that attested *-ika* is a formation of post-BdC date, but possibly as early as the 9th century.[45]

OCS *y* and *ъ* do not occur after iod, being replaced by *i* and *ь*: e.g. *gradъ* 'town' has I pl *grady,* but 'region' is **krajь, *kraji* (both spelled *kraі*).[46] This fronting process surely took place after BdC, cf. *igo = *jьgo < *jyg-aN <* IE *yug-om* 'yoke'. Two common-gender nouns meaning 'relative', *bližika* and *ǫžika,* are built on adjectival stems *(bliz-, ǫz-)* plus iod (probably the comparative suffix) and **-ÿk-á: *blīz-j-ÿk-á, *aNz-j-ÿk-á,* cf. *vladyka* 'ruler' and *vlad-* 'rule'. The adjectives *goŕьkъ* 'bitter' and *tęžьkъ* 'heavy' are from **gar-j-yk-* and

*teng-j-yk- with verbal roots 'burn' and 'pull', a nominalizing -j- and an adjectival suffix (cf. sladъkъ 'sweet' and lьgъkъ 'light').

The only OCS masculine ending in -ьk-ъ is grъkъ 'Greek', manifestly a relatively new loan,[47] but possibly as old as the 7th century. A word of obscure origin and only local East Slavic occurrence is gъlъkъ '(clay) jug', attested from 1117;[48] it is no help in the problem of dating BdC. Otherwise there are no old masculines in -ьkъ and no neuters in -ьko.[49]

Feminines in -ьka do not occur in canonical OCS, but *pъštьka (attested in 11th-c. Rus as poščьka) and *skoljьka 'shell' (skolьka in the Hexameron of John the Exarch) are to be accounted for as *pytj-yk-ā (cf. Cz. pecka 'pit (in fruit)')[50] and *skaljyk-ā (origin uncertain, but -j- assured by SC školjka/skoljka, cf. Rum. scoică). Rǫčьka is glossed by Vaillant (1974 353) as 'jar with handle' and he suggests a rather complicated set of relations with rǫka 'hand'. Yet the word means simply 'jar' (and occurs as an epithet of the Mother of God). I submit it may well be a diminutive *rank-j-yk-ā of *rank-j-ā, derived directly from the verb *renk- (cf. Lith. renkù 'gather') and meaning '(large) container'. Mečьka 'bear' (attested in 12th-c. Rus) is unclear; perhaps it is indeed from *mek- 'bleat' as a tabu epithet in diminutive form *mek-j-yk-ā.[51]

Thus it is clear that BdC preceded the fronting of *y after iod, and that a *-yk-suffix could thereafter have a fronted variant *-ik. This opened the way for the curious distribution "-ьk- after velars and palatals, -ъk- otherwise" that has been so productive in the history of East Slavic. Modern R. tetradočka can be set up as /tetrad-ъk-ьk-a/.[52] This alternation had been established by 1076, when the scribe of the Izbornik wrote knižьky (A pl) in his colophon. The word 'shirt' in the Primary Chronicle s.a. 1097 also shows ьk-a added to a velar stem *sark-: soročka or sračka (for OCS sračica).[53] This provides an explanation for the -ьk- in the OCS adverb malьčьko 'little' (Euch), but the first suffix, -ьč-, remains obscure.

Several words containing a g that might possibly have been subject to BdC require a series of separate explanations.[54] The plurale tantum kъnjigy 'book, writing(s)' was borrowed, probably in the 8th-9th c., from Turkic Danube Bulgar in a form very like *kynȳg-;[55] there was no reason for changing the g, and very likely BdC was not operative at the time. Veriga (usually pl.) 'chains, fetters' is not clear; it may well contain wer-j-ȳg-, but -eig- is also possible. Two or three early attested words containing presumable *-īg- are probably recent loans (7th-9th c.): jarigъ 'sack', kovrigъ or kovriga 'biscuit', črěmiga 'pot' (perhaps < Gr. keramik- via a Romance *cer(a)mīca > *čermīg-); see Vaillant 1975 498.

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The presence of a nasal in a BdC formula is illustrated by only three apparent native nominal stems: *měsęcь* 'moon' < **měs-in-k-aS*, with **in* from earlier syllabic *n; zajęcь* 'rabbit' (not canonical OCS) < *zaj-in-k-aS*, a formation which is by no means certain: and *ję3a* 'disease' (< **ingā*, cf. Pol. *jędza*, Ukr. *jázja* 'witch'). However *kъnę3ь* 'prince' < **kyning-aS*, Germanic **kuningaz*, represented in all the Slavic languages, and *pěnę3ь* 'coin' < **pēning-aS* < Germ. **penning-*, along with other Germanic loans in **–ing–*, affirm that BdC took place also when a nasal preceded the velar.[56] These examples will be discussed in more detail below.

Returning to the declensional desinences, we must consider the changes which destroyed the BdC environment in position after the original velar. First surely was the raising of **ǎ* to **y̌* before word-final **-S* in certain desinences: N sg m *-aS*, I pl *-āS*, Apl (etc.) *-aNS*, Npl *-aiS* thus became *-yS*, *-ȳS*, *yNS*, *-yiS* (yielding OCS *ъ/-ь, y/-i,-y/-ę, i*). There is no clear evidence for dating this process.[57] I submit that in any case it happened well after BdC had been completed as a phonetic process.[58]

The monophthongization of **-ai* not only destroyed the environment of BdC, it initiated the second regressive palatalization, KAI. But before that could have happened, the original **a* and the **-y̌* from older **-aN*, **-aS*, **-āS* and **-anS* were fronted in position after the **ƙ/*ǵ* (or **ć/*3̌*) resulting from BdC.[59] Before we examine the details, let us look briefly at some of the distribution of vowels in OCS.

Scholars generally agree that in normalized OCS *ě* may not stand after iod or the palatals *š, ž, č* and the groups *št* and *žd;* in this position expected *ě* (earlier **ē*) is replaced by *a* (**ā*). Thus the old stative suffix **-ě-* is preserved in *sěd-ě-ti* 'to be sitting', but represented as *a* in *stoj-a-ti* 'be standing' (**staj-ě-tei*) and *lež-a-ti* 'be lying' (< **leg-ě-tei*). The last example shows that the vowel change took place after KI. Following this same group of consonants in OCS, only front *i, ь* and *e* may stand (not *y, ъ o*), although in fact a large number of cases we are dealing with represent original groups of *C + j + back vowel*. Historically, then, *y̌* was fronted after iod regardless of length (or tenseness), while **a* fronted to **e* if short (lax) but, on the contrary, **ē* was backed to **ā*.[60] Therefore, after iod only **ī, *i, *e* and **ā* could stand: **ȳ, *y, *a* and **ē* were excluded. The backing of **ē* can be observed in roots (**kēs-aS* > *časъ* 'time'; **gēbā* > *žaba* 'frog'), in derivation (e.g. the non-productive suffix **-ēl-i-* in *piščalь* 'whistle', to *pisk-aj+* 'to pipe', but *svirělь* 'flute, pipe' to *svir-aj+* 'to pipe'; *pečalь* 'sorrow' to *pek+sę* 'worry'), and in the imperfect tense (*možaaše* 'was able (3g)' *mog+;* *tečaaše, tek+* 'run'; cf. *neseaše* 'was carrying', *nes+)*. However, there were no declensional desinences beginning with **ē*, and therefore no examples can be adduced from non-verbal inflection.

I shall refer to this double process – the fronting of *ў and *a and the backing of *ē-, as the *adjustment* of vowels after palatals.

Now, precisely the same fronting process took place after the ǩ/*ǵ (or *č/*ǯ) of BdC, so that for every short *a posited in Table I (to be read as y if before *S and thus subject to raising), we assume a change to *e or to *i. Thus *atiǩ-aS > *atiǩ-y(S) > *atiǩ-i(S) (> отьсь); *atiǩ-ami > *atiǩ-emi (> отьсемь); *atiǩ-aNS > *atiǩ-yN(S) > *atiǩ-iNS (*atiǩę(S) > отьсę); *atiǩ-au > *atiǩ-eu (> отьсu); *atiǩ-ai > *atiǩ-ei > (отьсi). However the long *ā was unaffected: *atiǩ-ā > отьса, *awiǩ-āN > *awiǩ-ā (> овьсǫ).[61] No *ē existed in this position (for no declensional desinences began with *ē), so no change was needed. The distribution of vowels following the results of BdC is identical with that after iod and palatal consonants resulting from iodization.

What is new in the attested system of OCS is that *c* and *ʒ* are the only "soft" consonants after which *a* and *ě* are contrasted (see *Gram.* § 2.415). In OCS *grěšьnica* and *grěšьnicě* are different words, both unambiguous: the first has stem *c* followed by *a* (N sg f), while the second reflects stem *k* followed by *ě* and therefore the obligatory morphological substitution of *c* (L sg m).[62] This situation existed only subsequent to KAI, a historical change that was very recent.[63] At this point there were enough factors which obscured the distribution of original *k* versus BdC *c* and KAI *c* so that old suffixes began to be redistributed and new ones created. The loss of the jers (i.e. the establishment of vowel ~ zero alternations) during the OCS period was surely a major contributing factor to the restructurings which subsequently took place.

The formula Cĭ(N) ___ [low vowel] is surely established for noun stems, and BdC as an early and regular process in declension is certain. It took place before the special raising of desinential *ā that led to ъ/-ь, -y/-i, and -y/-ę in the twofold declension, before the monophthongization of diphthongs, and before the adjustment of vowels after palatals.

The results of BdC in the verbal system are quite another matter.

In inflection, the formula Cĭ(N) ___ā could be met only in the imperatives of a tiny group of verbs like *rek+ 'say': *rik+ai-S *rik+ai-te (OCS рьci рьcěte; also *tek+ 'run' and *pek+ 'cook', *žeg-/*žьg- 'burn', possibly *lęk+ 'bend' [*link-aiS]). The non-singular forms with -ě- show the action of KAI, not BdC (for *rikaite should yield "рьcite"). Although one is tempted to see such morphological curiosities as archaisms, the evidence is rather that *rьcěte* is not ancient.[64]

In stem-formation, this same small group of verbs shows up with *i* in the root when combined with the suffix *-ā-: *na-ric-a(j)+* vs. *na-rek+*, 'name', presumably then historically *-rīk-ā; *raždiʒa(j)+* vs. *raždeg+* 'enkindle' from *arz-gīg-ā-. This is explained as Slavic length-

ening of the zero-grade vocalism of the root, somehow parallel to *u-mir-aj+* 'die' and *na-čin-aj+* 'begin', with length, versus *u-mьr+* and *na-čьn+*. At any rate, the alternations *rek-* ~ *rьk-* ~ *ric-* can be assumed as underlying in OCS. In *po-miӡ-aj+* 'blink' we see the sonorant root **meig-*, parallel to the zero-grade **mig-* which can assumed for OCS on the basis of *mьgnovenie* (1 Cor 15:52), which implies **mьg-nǫ+*, and *mьžanie* (Lěstvica, Hex.) < **mьg-ě+*. Here again is evidence for Slavic lengthening of the root-vowel in the presence of the suffix **-ā-: *-mīg-ā*. Note, however, that the conditions for BdC would be met even if we speculate that this particular morphologically-determined lengthening had not yet taken place: **rik-ā-* and **-mig-ā-*. What is important for the present discussion is that only this formative **-ā-*, whatever its exact function and meaning may have been, provides the low vowel needed for the BdC formula in verbal stems.

Less clear is *vъz-dviӡ-a(j)+* 'raise', which if regular by BdC implies **-dwīg-ā-*, and zero-grade **dwig-* derived from normal-grade **dweig-*. However, no **dvьg* forms seem to be known in any form of Slavic, and the etymology is obscure. Furthermore, the well attested verb *dvig-nǫ+* has root aorist 1 sg *vъzdvigъ* and 3 pl *vъzdvigǫ* which, if assumed to be formed on **dvig-* plus **-aN* and **-aNt*, should have undergone BdC.[65] It is more likely that only the shape *dweig-* existed in the pre-OCS period, and *-dviӡ-a(j)+* was derived by a new rule: "in the presence of imperfectivizing (or iterative) *-ā-* or *-āj-*, mutate root-final *k/g* to *c/ӡ*". This rule makes no reference to the elements that precede the *k/g*. The innovation is clearly illustrated by *na-vyc-aj+* 'learn' (from **-ȳk-ā-*, cf. *na-uč-i+* 'learn' < **-auk-ī-*)[66] and the isolated imperfect *klьcaše* 'stirred up, examined closely' (ps. 76:7; from **klyk-*), where no palatal element is to be found in the environments. It seems better to see *-tȩӡ-a(j)+* as an innovation based on **teng-* than as a regular BdC reflex from some dubious root-form with *i*-vocalism.[67]

The derivational rule requiring mutation appears to have varied from dialect to dialect, for even OCS has conflicting evidence. Thus *po-strig-aj+* and *po-striӡ-aj+* 'tonsure' (probably **streig-*, cf. infinitive *strěšti* < **straig-*), *blisk-aj+* 'flash' beside both *blisc-aj+* and *blist-aj+*. Moreover, there are doublets showing that the basic root-vocalism underlying this formation differed, e.g. *po-grěb-aj+* and *po-grib-aj+* 'bury' imply lengthened **greb/*grib* (though again there is no trace of **grьb-* reflexes in Slavic). Thus beside the alternation *žeg-/žьg-* we find *sъžag-aj+* along with *raždiӡaj+* (**-gēg-ā-* ~ **-gīg-ā*).

Examination of the data classed insofar as possible by periods and areas[68] leads to the conclusion that from "legitimate" BdC cases like **-rīk-ā-* > **-rīk-ā-* and **mīg-ā-* > **-mīg-ā-*, the mutation spread to other velar roots, including those with sonorants.[69] Thus OCS *na-mrьc-aj+* 'darken' vs. *-mrьk-nǫ+* 'become dark', or probable OCS *tlьcati* (Lěstvica)

for *tьlk-aj+* ~ *tlьk-nǫ+* (and *tlěk+* < *telk-*) 'knock', and the like have led scholars to expand the BdC formula to include all sonorants: *Cǐ(N/r/l)* __ *ǎ*.[70] However, this formula must be taken not as that of the original BdC, but of the far more restricted morphological environment for making iteratives in late and dialect Slavic. It is probable that a few such forms existed in most dialects, but the productive application of this rule (in several variants) appears to have been largely confined to South Slavic, chiefly SC or Slovene. Failure to make distinctions among sources of attestation has led scholars to try to account for utterly heterogeneous data as though they belonged to a single system. It is time to recognize that even OCS verbal formations are innovative; BdC was long dead as a phonetic process, and the *k* ~ *c* alternation had become regulated on the basis of purely morphological factors.[71]

One wide-spread but slightly anomalous verb apparently followed BdC as expected: *sik-ǎ-*, pres. *sik-ī-* 'piss' (paralleled only by *sъp-a-ti sъp-i-tъ* 'sleep') surely yielded *sьca-* but *sьči-*, cf. Slovene *scati ščim*. It is scarcely recorded before the modern period, but assured as ancient by reflexes in many modern languages, even though a variety of analogical changes occur, see Vaillant 1966 405.[72]

Both BdC and the adjustment of vowels are progressive changes, having in common the effect of a preceding high vowel or palatal element on the following velar consonant or back vowel or *ě*.[73] Furthermore, BdC invariably operates across a syllabic boundary. In contrast, KI and KAI and most other context-determined processes of prehistoric Slavic are regressive and intrasyllabic, some indeed being caused by a shift of syllabic boundary.[74] The distribution of vowel or zero determined by "the fall of the jers" within the OCS period is regressive, but conditioned by sequences of syllables; most of the immediate adjustments to the phonetic loss of weak jers in the early historical period are again regressive and intrasyllabic (i.e. within the newly-formed syllables). Progressive assimilation and changes transcending syllabic boundaries are thus either very old or else after about 1000 and therefore no longer Common Slavic.[75]

IE *ḱ/*ǵ* doubtless became *c/*ȝ* before yielding early Slavic *s/*z*. This *c* presumably still existed when *s* after *i u r k* became [+ high] *X*. A formula like *picātei* (< *pik*, cf. OCS *pьsati* 'to write') would thus remain distinct from *pisātei*, whose *s* changed, yielding *piXātei* (cf. *pьxati* 'to pound, pulverize'). The stop quality of ancient *c/*ȝ* may have remained until the time all obstruent clusters (excepting those beginning with *s/z*) simplified. Thus *ts* (presumably including morphophonemic *(ds)*, *ps* (*bs*) and *cs* (*ȝs*) all

yielded simple *s, while *kX (*gX) went to *X, which thereby was phonologized.[76] At this point the system had two fricatives, *s and *X, but no palatal stops. The *X can be characterized as [+high], with a [-back] variant before front vowels or iod and a [+back] variant before back vowels.[77] For example, /piXătei/ would be phonetic [pixătei], distinct from [pisătei] (< *piǩ-), while 2 pl pres /piXĕte/ would be phonetic [pixete] or [pišete], the fricative being different from that in /peisjete/, present of /pis-ă-/ < *piǩ/peiǩ.

Thus high vowels affected a following *s: it is possible that the high front *ǐ similarly affected a following velar stop. If we then assume that *k/*g were fronted to *ǩ/*ǵ by BdC at the very beginning of Slavic linguistic history, a range of hypotheses must be considered:
(1) no further contextual constraints;
(2) fronting blocked by following *ў (i.e. high back vowel);
(3) no change before *ў or *ǐ (i.e. any high vowel);
(4) change only in the presence of following *ǎ.

Thus:

k/g > ǩ/ǵ after ǐ and before (1) ǎ ĕ ǐ ў
                                     (2) ǎ ĕ ǐ
                                       (3) ǎ ĕ
                                       (4) ǎ

In more formal terms the environments are:

(1) – V

$$(2) \quad - \begin{bmatrix} V \\ \left\{ \begin{matrix} \left[\begin{matrix} +\text{high} \\ -\text{back} \end{matrix} \right] \\ [-\text{high}] \end{matrix} \right\} \end{bmatrix}$$

$$(3) \quad - \begin{bmatrix} V \\ -\text{high} \end{bmatrix}$$

$$(4) \quad - \begin{bmatrix} V \\ -\text{high} \\ -\text{back} \end{bmatrix}$$

It is self-evident that hypothesis (3) is simpler than (4) or (2).

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Under none of these formulas does the phonetic $\acute{k}/\acute{g}$ achieve phonemic status; phonologization lies in the future. Under the strongest claim, it is necessary to hypothesize a subsequent loss of fronting before the high back vowels, presumably because they were phonetically rounded.[78] This might well be tied with the process of loss of *eu by its split to either *jau (whereby the [-back quality] is concentrated in the new glide segment) or *au (with complete loss of [-back quality]), where the back quality of the syllabic peak seems to be determined by the labial quality of the final element – a process so old that it is hard to separate genuine cases from analogical developments.[79] Hypothesis (1) then predicts that *lig-yk-aS phonetically became *liǵyk- but, as underlying /ligyk-/ is maintained to produce OCS lьgъk-, we must suppose that the phonetic *ǵ was lost and the BdC formula became more complex by excluding *y̆.

Hypothesis (3), formally the simplest, predicts fronted $\acute{k}$ in the vocative, *atike > *atiḱe. Since the attested otьče has č, the KI palatalization must be formulated to affect $\acute{k}/\acute{g}$ as well as k/g. This possibility, as far as I am aware, was simply never considered by Slavists before Channon, although there is nothing peculiar about it.

Slavists have taken for granted the end points of the development involved in the historical change: k is assumed to have gone directly to either č or c, and g to ǰ or ȝ. It is far more plausible to assume first simple palatalization: $k/g > \acute{k}/\acute{g}$, i.e. velar becomes palatal. Observation of languages of diverse types shows that, while palatal stops are stable units in many languages, there is a strong tendency for them to be pronounced with an off-glide which leads to distinctive affrication. Two processes seem almost equally possible: the off-glide has hissing quality and č/ǰ develop, or else the off-glide has hissing quality and ć/ȝ́ develop. Quite commonly the "soft" ć/ȝ́ "harden" to c/ȝ, but they may also become č/ǰ. Finally, the voiced affricates, ǰ, ȝ́ and ȝ become continuant ž, ź and z somewhat more often than voiceless č, ć and c become š, ś and s.[80]

With these generalities in mind, it seems plausible to envision the results of BdC as either $\acute{k}$ or ć at the time velars before a front vowel or iod begin to be articulated more toward $\acute{k}$. The first phase of KI – we may symbolize it KI[a] – then produced $\acute{k}/\acute{g}$; the second phase, KI[b], applied to the $\acute{k}/\acute{g}$ (or ć/ȝ́) in that same environment. Thus all forms of the paradigm of the possessive adjective *atik-j-as (OCS otьčь) developed a $\acute{k}$ which, along with the $\acute{k}$ or ć of the vocative *atiḱe/atiće, became č.[81] The G sg of the noun atik-ā(D) develops a $\acute{k}$ by BdC, that of the adjective *atik-j-ā(D) develops it by KI[a]: but only the adjective is subject to KI[b] and therefore its $\acute{k}$ goes on to č: OCS otьca but otьča. In distinctive terms, the BdC $\acute{k}$ apparently remains a variant of /k/ even after KI has

operated.[82] Phonologization come about when *kjā becomes *čā and thus opposed to *kā, but this still leaves Gen. *atiK̄ā (vs. *atičā) with a K̄ which is a variant of underlying /k/.[83] Moreover, *kē also becomes *čā, e.g, milk-ē-tei > *milčāti (> OCS mlьčati 'be silent').

The raising of *ā before *-S in desinences must have helped to phonologize *K̄/*ǵ, as I suggested above. As long as underlying S somehow is maintained, N *atiK̄aS, Apl *atiK̄aNS, and I pl *atiK̄āS still have underlying /k/, but in the next stage the matter is less certain: *atiK̄yS, *atiK̄ȳNS, *atiK̄ȳS.[84] Loss of phonetic *S and the fronting of *ȳ and *a surely established *K̄/*ǵ as distinctive. Now older *ligā vs. *jygā had become *ližā vs. *jigā (later *lьʒa, *jьga G sg).

The adjustment of vowels starts the drift toward what Jakobson calls synharmonic syllables: velars must be followed by back vowels, palatals by front vowels (dentals and labials being neutral but later developing palatalization before front vowels and labialization before back vowels). However, at this initial stage the distribution is mixed; *K̄/*ǵ, *č/*ʒ and *j require a following front *ī, *i and *e but back *ā, while *k and *g allow only back vowels.[85]

The monophthongization of diphthongs introduces a series of new factors. First, the new *ē and *ī from ai and *aiS induce the second regressive palatalization and a new *K̄/*ǵ. The new sequences *K̄ē and *ǵē are not subject to backing: thus *kā, *čā and *K̄¹ā are opposed to *K̄²ē; but while *kȳ and *čī are separate, *K̄¹ī (e.g. in N pl *atiK̄ī < -K̄ei < *-kai < atiKaiS) cannot be distinguished from *K̄²ī (e.g. in N pl *atra-K̄ī < *-kyi(S) < atrakaiS): OCS otьci like otroci. It is probable that the OCS forms like otьcu and otьču contained phonetic *ū, while ovьcǫ and ovьčǫ (A sg of ovьca 'sheep' and the possessive adj. ovьč-) had phonetic *ǫ̈ but these new front rounded vowels did not become distinctive in South Slavic.[86]

Thus, I submit, BdC started at the very beginning of Slavic linguistic history, probably as the general formula: k/g > K̄/ǵ after ī̆ (which may be followed by a nasal). Later the definition added "unless before ȳ", and possibly somewhat later the requirement that ī̆ be preceded by a consonant, and not e or a.

As KI became non-productive, though widely required in derivation and morphology, the k/g ~ c/ʒ alternation (extended in some dialects to x ~ s) acquired a narrow morphological definition in verbal stem-formation. The K̄/ǵ originally resulting from the progressive palatalization became fully phonologized, part of the underlying set of obstruents. New borrowings for some time were subject to KAI, i.e. k/g before front vowel automatically became c/ʒ. This period preceded OCS, but probably not by long. For OCS and other southern dialects, a flood of new borrowings with k/g before front vowel led to a new

situation. At this same time, the short (lax) high vowels were being changed or deleted, and new structures rapidly developed, with new dialects diverging along different paths.

<center>*</center>

Is there external evidence to help date BdC? It has been claimed that place-names and loan-words into Balkan languages can help. The Slavs invaded the Balkans during the sixth century, and from about 570 began to settle in most of what is now Yugoslavia, Bulgaria and Greece. The major part of mainland Greece surely had many Slavic settlements for centuries, but by about 1100 only Macedonia and Thrace were essentially Slavic territory; here and in the Pelleponesos there must have been large groups of nomadic or seminomadic Arumanians and Albanians. Several Greek towns called *Gardiki* indicate that **gard-ik-aS* (cf. place names Gradec, Gradac, Gorodec, Gra(t)z all over Slavic and former Slavic lands) had already become **gard-ik̂-(i)* when the Greeks heard the name a century or two before Cyril and Methodius were born. If this word had still contained **-ika(S),* Greek would have made it into *-ikos* or *-iko(n),* or even *-ika* –all eminently suitable forms (cf. Mareš 62).[87]

Numerous spellings of the type *-ikia, -ikeia* for Slavic *-ica* unanimously demonstrate that this suffix contained a non-velar consonant: since Greek had no *c* (and probably not even a cluster *ts)* at the time, Greeks perceived, and wrote, *k̂.*[88] On the other hand, Slavs heard Greek *k̂* as their own *c: kukkiá* 'beans' (older *kokkía*) appears in OCS as *kucija* (in Ukr. and R. as *kut'já*).[89] Vasmer, who collected hundreds of Greek place-names he considered Slavic in origin, regularly transcribed these spellings with *k̂,* but because this did not correspond to his conception of the phonetic value of OCS and later *c,* he felt the spellings showed a stage still "before the completion of the palatalization" (1941, 301). His prize example of a velar is 'Aβαρῖκος for **avorьcь* (301) cf.**jāwar-aS* 'sycamore', but on p. 65 he makes a plausible case for **avorьnikъ,* with *rn > r* by Albanian interference, a conclusion far more in keeping with the total evidence he adduces.[90] Thus the Greek data confirm that the OCS distribution of *k ~ c* (or *ć* or *k̂) ~ č* had been reached well before 863.[91]

Austrian place-names have caused much needless controversy. Spellings like *Liezniche* or *Sabinikcha* were interpreted as containing **-ik(ъ)* or **-ik̂(a)* or **-ik̂a* or **-ica (*Lěsьnikъ/*Lěsьnica, Žabьnikъ/ Žabьnica),* the matter being complicated by obvious changes of suffixes over the centuries. What is important, however, is the probable phonetic meaning the spellings had for the Bavarian scribes who recorded the names. The dialects they spoke may have had unaspirated *k* as late as

the 8th c., but later only strongly aspirated *kx.* They also had strongly aspirated *c* (from shifted **t,* spelled ''z''). Ordinarily they substituted *k* (later lenis *g*) or *kh* for the **k* or **ć* of BdC. Fran Ramovš, the historian of Slovene, carefully sorts out the likely phonetic facts of 8th-11th c. Slovene, the probable etymologies of the toponyms (utilizing the modern German and Slovene *dialect pronunciations,* not the official spellings), and quite plausibly concludes that the evidence for *ć* and *c* (first ''soft'', later ''hard'') is strong. [92] He maintained that BdC was completed by the 9th c. in the Austrian Alps.[93] Unfortunately his wise words have been unheeded by many Slavists. [94]

Place-names on the territory of present-day Yugoslavia give little information. The Roman towns *Longaticum* and *Tarsatica* come out as Slovene *Logatec* < **logatьcь* but *Trsat* < **tьrsatъ.* In both cases the end of the word has been perceived as a suffix and replaced by a Slavic suffix or merely desinence.[95] Farther south, the island of *Curicum* was surely called **kurku,* with Rom. syncope (a factor overlooked by Bidwell for this name), and it properly yields *Krk.* *Serdica* (now Sofia) also was re-analyzed and became *Srědьcь,* though perhaps it was **Srědьka* or **Srědьkъ* for a time.[96]

In sum, Balkan and Alpine toponymic evidence is of dubious value for our purposes. The fact that BdC concerns velars at the end of stems and especially in suffixes is vital here, for the adaptation of non-Slavic toponyms involved a general restructuring to fit Slavic inflectional and derivational patterns. While little of the evidence is reliably older than OCS, it does suffice to show that the final stage of the monophthongization processes was completed between the 7th and mid-9th centuries: perhaps **au* to **ū* (thereby assuring the delabialization of **ȳ,* which in many SSl areas soon merged with **ī*),[97] surely metathesis of liquid-diphthongs *(*tart* > *trat,* etc.) and nasal diphthongs yielding to nasal vowels. None of this helps date BdC. No examples indicating the action of KI are available, but in spite of the difficulty of establishing the initial shape of some borrowed toponyms, it is reasonably clear that the native KAI process produced *c* and probably *z* (most likely via **ʒ)* from *k/g* (see Bidwell).

No pertinent evidence before this time is available from the West Slavic area, but nothing contradicts the assumption that BdC was carried through everywhere as in OCS. In Rus, certain toponyms appear to show the results of KI, e.g. the river-names *Ižora* (< *Ižera,* oldest attestation 1377 spelled Ižьžera), etymology uncertain, but probably containing *-ge-* (see Vasmer s.v. *Ižora)* and *Lučésá,* (also *Lučósa),* Lith. *Laukesà.* These borrowings hardly can be older than the 7th c., and they may be considerably later. A possible old *c* is in Finnish *katitsa,* Estonian *kaits* (< **kadits*) 'fish-weir', apparently from **kotьci* pl. tant.

< *kat-ik- (see Vasmer s.v. kotec),[98] but this is not particularly helpful. We may speculate that BdC and KI reached the northeast rim of Slavdom relatively late.

What is interesting is evidence both from our earliest manuscripts and from modern dialects that KAI was limited or inoperative in northern Rus. Thus the scribe of the Novgorod Minei of 1095 and 1096, Dъmъka, twice writes his name in the dative as Dъmъkě (construed with the imperative pomozi 'help', with -zi < *-g-aiS, i.e. with KAI applying in this church formula). Recent data collected in the Pskov, Olonec and Archangelsk regions include a number of derivatives of the roots *kaid- 'strain, filter', *kaip- 'flail' and *kaiw- 'pipe; spool' (general Slavic cěd-, cěp-, cěv-, not attested in OCS) with k-: kedit', kep, kévka (cf. Est. kääv, Vasmer s.v. cevka).[99]

Russian dialect stegá 'path', related to older *stigá (> OCS stьʒa, 11th-c. R. Slavonic stьzja) is sometimes said to have resisted BdC (e.g. Shevelov 344). Yet the expected stezjá also occurs (Dal' lists diminutives stéz'ka, stezíca,), though it is now obsolescent and has long belonged to elevated style (the usual word being tropinka). The palatalized z' marks it as a native form (a Slavonicism would have hard z, cf. pol'za for OCS polьʒa), and the meanings nicely fit Ukr. stéžka. R. stěžka is attested from 1554 and is the expected diminutive from *stьʒ-ьk-a. Stegá is absent from dictionaries until 1852; surely it is a back-formation, cf. doróž-ka from doróga 'road' and the folkloric expression stěžki-doróžki.

The idiom ni zgi ne vidno/vidat' ≅ 'It's pitch black, one can't see anything' presumably contains the genitive *stьgy, thus affirming the proper phonetic development without "preserving" the vowel.[100] But the old genitive should be *stьzě, which should yield *z'd'z'ě, with a unique cluster which might well be interpreted as a palatalized form of zg. When the reflexes of ě were replaced in the genitive desinence by y/i, the form zgi would appear.

If one assumes that BdC was very late, then the putative *stьga and berry-names in -ika may be viewed as unshifted forms which somehow survived through the BdC period. Indeed, with the unshifted KAI forms, one might hold that the northernmost dialects of Rus resisted all but KI palatalization. On the other hand, this evidence is not strong enough to refute the assumption that BdC was a very early change, consistently carried through in nouns. For the historical period in dialects which rejected ʒ,[101] the alternation z(z') ~ ž is motivated only where iotation is expected; otherwise there is no motivation for relating ž to z. Thus a prediction from a ž will "restore" g. In this fashion R. fljaga 'flask, canteen' is a 16th-c. back-formation from fljažka, itself created by phonetic neutralization of ž and š in the diminutive *fljaška < Pol. flasza < Ger. Flasche (cf. Vasmer). On the other hand, starting from z, no muta-

tion is expected *(stezjá - stéz'ka)*. This tendency to avoid unmotivated *ž* is as old as OCS, where *polьza* > *polьza* in some dialects (probably including Preslav but not Ohrid), whence the derivative *polьz-ьn-ъ* 'useful' (see *Gram.* 192 for more details). To *kladęzь* 'well' the expected adjective *kladęžьnъ* occurs in the Hexameron, but in most manuscripts it has been "updated" to *kladęzьn-*. To *jęza* 'sickness' only *jęzьnъ* occurs (1^X, Izb. 1073) = 'νόσου'. A much newer example is the OCzech *vítěziti* 'prevail, be victorious' and *vítězný*, derived without consonantal mutation form *vítěz* 'hero' by the front-vowel suffixes *-i-* and *-ьn-;* they show no trace of the etymological *g* of *vitęзь* (see below). From *kněz* 'prince' (< *kъnęзь*, see below), however, the adjective is *kněžský* (suffix -ьsk-). Yet OPol shows the expected *ž* in *wiciężyć* and *wiciężny*. From somewhat younger Pol forms *zwyciężyć, zwyciężny* and other derivatives (the base-noun *wicądz* is not attested), Ukrainian borrowed and adapted *zvytjažyty* and *zvytjažnyj* and derived from them a new noun for 'victory': *zvytjaha*. If we did not have the information to trace these steps, the form *zvytjaha* might be considered a reflex of "unshifted g" and proof of an ancient *vitęgъ*.

Borrowings from Germanic belong to different times and places and we need not expect the suffix *-ing-(az)* to be treated uniformly. *Vitęзь* 'hero' entered the Slavic world from the northwest where the Baltic Slavs regarded the Vikings, 'men of the *wīk* [a special settlement]' (who served as armed escorts for the merchants who ranged from the Baltic through the North Sea and English Channel down into the Mediterranean) in a positive way. BdC affected the suffix normally, and the word spread from the West Slavic lands sometime after the 12th c. to part of the South and, even later, the East (cf. Vasmer s.v. *vitjazь*). An equivalent name for these same warrions was *wār-ing-,* 'men of the *var* (the Persian, then Turkic, name for the special settlement)'. It is plausible that it yielded *varęзь* at first, but BdC ceased to operate and the Varangians continued to play an important role in Rus. The Scandinavian pronunciation surely caused the *g* to be retained as a doublet or, perhaps, "restored" later (cf. the adj. *varjažьskъ*).[102] Settlements called variously *Buregi/Burezi, Burjagi/Burjaz'* (supposedly from *būr-ing-,* ON búr 'hut, room' cf. Vasmer s.v. *Burjagi)* shows *g*-forms closer to Novgorod, *z*-forms further south. This encouraged Shevelov to hold that near Novgorod BdC "was in general resisted" (350). It is rather more likely that as a relatively late borrowing this word was integrated into the old pattern in areas with less contact with Scandinavians. Closer to the merchant city, the foreign pronunciation could be known and influential; indeed, it might serve to oust older Slavic *z*-forms.[103] Another similar term, but probably borrowed later,

is *kъlbjagъ (attested as kolbjagъ in the copies of the 11th-c. Rus Code), from Scand. kylfing-. The term occurs only in the Code, but place-names like Kolbjàgi (Vasmer's lemma), Kolbežiči and probably Ko-lobjažiči and Kolobjažeckoe (A. Stender-Petersen, Varangica, Aarhus, 1953, 99 ff.) confirm its use in various areas assumed to be on trade-routes of this group.

Variation in other words of Germanic origin must be examined case by case. Pěnęзь 'coin, money' and kъnęзь 'prince' fit the patterns expected from *pěning- (< Germanic *penning-) and *kyning- (< *ku-ning-) with no old cases of g.[104] Both were probably borrowed in the west. Kъnęзь referred to local rulers of Slavs everywhere during the 9th-11th c., and on the whole has survived, albeit with varyingly modified meaning. Pěnęзь, however, remained essentially WSl, although the Cyrillo-Methodian translations introduced it to South and East Slavs as a bookish word. (In ESl, apart from early church books, it recurs with reference to commerce in Lithuania in 1388, i.e. in dealings with people with western connections.)

The equivalents of *skilling- 'shilling' are far more varied, surely because different groups of Slavs continued to hear the word from the mouths of traders of varying backgrounds over a period of several centuries; there is no way to separate out the levels with confidence. OCS has the word in a single passage, Mt. 22:19. Sav. skъlęзь violates OCS structure by ь after k, Mar. sklęзь by initial skl-. (In Zogr, this passage is in the 12th-c. additions, where phonetic detail is not to be ascribed to OCS: skъlęзь.)[105] The Primary Chronicle has ščьlęgu s.a. 885 and 964, implying *ski- affected by KI but *-ing- not subject to BdC. However the KAI effect on -sk- in some dialects of Poland and perhaps Rus was originally to produce šč (OPol. Polska, DL Polszcze). We might then assume that the new *skilling- undergoes this KAI effect, and has -in- replaced by ä-, by influence of older names for the money or by some other process.[106]

The old word *useręзь or *usoręзь 'earring, nose-ring' (by chance not attested in OCS) is replaced in some mss. after about 1300 by a variety of forms with g, not з. The cause is surely repeated contact with other forms ultimately derived from Germanic *ausahring-.[107] *Retęзь 'chain' (not, in spite of Vasmer s.v. rétjazь, to be ascribed to R or R Slavonic, but confined to West Slavic and the adjacent Ukrainian, with 16th-c. Ukr. Slavonic) is an etymological problem, but fits the BdC pattern. Also confined to West Slavic was the old Germanic word for 'brass', *massing- > *mosęзь: Pol. mosiądz (with adj. mosiężny), Cz. mosaz mosazný, etc. Ukr. mosjáž is a back-formation from mosjážnyj, adapted from Polish. OCS kladęзь 'well' suggests *kald-ing-, which in turn corresponds to OR kolodjazь, though mod. R. normally has koló-dec (see Vasmer) with a different suffix, cf. Bg. kládenec.[109]

Native forms with stem-final *k were common in the earliest Slavic, and BdC surely applied regularly. The shape *Cĭg-, however, occurs only in three cases, *stigā (dealt with above), the borrowing *gabig- (cf. Goth. gabigs) > OCS gobьзь 'productive, rich' as expected by BdC (see Gram. 192 for derivatives in OCS), and *lig- in po-lьз-a 'benefit, use' and lьzě 'it is permitted', which presents difficulties.

First, what does the OCS spelling lьzě represent?[110] Vaillant assumed *lьзě, which he seems to view as a locative or dative of lьga with KAI applied (1950 55).[111] I submit that a different interpretation is possible: it can be the nominative *lьзa, originally an abstract *ligā to the u-stem adjective *ligu- (which, with k-suffix and late re-analysis, gave OCS lьg-ъk-).

The matter is anything but simple, not least because this word and its near-synonyms are part of a semantic system of legal and moral judgement concerning desirability, appropriateness, possibility, and their opposites. Such concepts change with social systems. We have every reason to believe that the rapidly changing social contexts in which various Slavic groups found themselves even in the restricted OCS period from 850-1100 must have led to divergent norms of behavior and varied innovations in lexical and syntactic means of expressing the necessary distinctions. It is not at all surprising that our scanty OCS (plus early Rus) data are contradictory, indicating a perhaps hopeless entanglement of diverse traditions. Information from later texts provides little help in disentangling matters; indeed it is probable that medieval scribes and scholars, themselves uncertain of the exact meaning of certain words and constructions, attempted "corrections" in ways which resulted in greater obscurity. What is important is that our oldest evidence is extremely unclear, and thus ANY interpretation must be explicitly speculative.

Formal parallelism for original -ě is to be found in another rare modal, trěbě, which functions logically both as an uninflected adjective (e.g. I Cor. 12:21 ne trěbě mi esi... ne trěbě mi esta 'χρείαν σου οὐκ ἔχω... χρείαν ὑμῶν οὐκ ἔχω') or noun (Sav John 16:30 ne trěbě imaši, p. 5, but with a verb ne trěbueši, p. 98, 'οὐ χρείαν ἔχεις') and, with byti or ne byti, a modal: Supr 345.12 nъ velmi trěbě iskati 'but it is very necessary to search'. Whether it is by origin a noun in the locative (or dative?),[112] or some archaic adjectival or verbal form, is hard to say: it is traditionally defined as an adverb.[113] Trěbě was close to the meaning of the verb trěbovati and phrases using the noun potrěba (see Slovník), which in turn overlaps with some senses of polьza (e.g. Luke 10:42, Sav edino že estь na polьzǫ Zogr Mar na potrěbǫ 'ἑνὸς δέ ἐστι χρεία').

Now, both potrěba and polьza are formally post-verbals. There is no attested parallel verb for potrěba (since potrěbiti and the like belong to a different root meaning 'clear out, eradicate, destroy'), but *polьžiti

did exist, with the meaning 'receive benefit'.[114] A doublet *polьziti may be posited for the 10th-c. language of books from the south (cf. Sreznevskij). This shows that the underlying form was regarded as *lьg or *lьȝ in one time and/or place, but as *lьz in other dialects.

Polьȝa/polьza surely was accepted in the south, but it must have been a literary import. The denominative polьȝevati/polьzevati displaced *polьžiti/*polьziti.[115] However *lьȝa or *lьȝě (or both) was (or were) eliminated. Since OCz has lzě,[116] and cognates are found in OPol ldza and lza, it is reasonable to hypothesize that in Moravia Cyril and Methodius found the nominative *lьȝa (phonetically probably *lьźa, for *ȝ surely was not current in that area) used in modal senses. The confusion in spelling caused partly by the use of the ȝ/z letters and partly by the use of the vowel-letters was compounded by the purely literary character of the word. Modern scholars can only speculate whether a form *lьga may have existed in the South Slavic of the 9th century. I doubt it.

In Rus, the form lьzě was spelled for a while, but the form lьzja (nearly always negated) won out. The ne lga and polga of later texts[117] and modern dialects are often cited to illustrate the resistance of the dialects of north Rus to both BdC and KAI. I suggest rather that these forms are rebuilt because the literary alternation of g and ź and ž, based as it was on the southern reflexes of KAI (as well as BdC and KI), led to hypercorrect spellings by scribes.[118] On the other hand, such forms could result at any time as long as the semantic connection with the original *ligu- 'light', (or its reflexes) was maintained.[119] Indeed, this connection could have kept BdC from operating in the first place. The palatalization might have affected only voiceless k at the beginning and, moreover, no other g-examples seem to have existed.[120]

One final example is cited to show resistance to BdC in the north of Rus: bába-jagá is the only recorded Russian form of the name for a special witch, and equivalents are usual in Belorussian and Ukrainian. Ukrainian, however, also has jázja 'witch', thus corresponding to the other cognate reflexes of jęȝa < ingā.[121] In the absence of any related forms to establish a morphophonemic basis for "restoring" g, I can only speculate that some affective factor restrained or blocked BdC here.[122] (Or perhaps the influence of Baltic *jēgā 'power'? Belorussian developed largely in formerly Baltic territory, surely the first stop for the ancestors of the Great Russians as they expanded from south of the Pripet and west of the Dnepr valley.) In any case, these words are insufficient cause for abandoning my hypothesis that BdC was early and consistent. They test, but do not disprove, the rule.

The late Václav Machek made the important observation that vьsь 'all' and the verbal stem -smis-aj+ (cf. směxъ 'laugh') are the sole al-

leged results of BdC operating on *x, while "exceptions to BdC" like *ženixъ* 'bridegroom' and aorists of the type *xvalixomъ* are in fact the rule. The etymology of *vьsь* is uncertain: if it is the same as Lith. *visas,* it cannot go with Skr. *viçva-.* Machek argues for a connection with **wik̂-* 'village, community' (whereby Lith. *visas* must be a loan from Slavic). Without accepting Machek's argumentation in all details, I do agree that *vьsь* (**vьšь* in West Slavic, but perhaps **vьx-* at least for part of the declension in early Novgorod, see below) is not certainly a regularly derived form. The verb *-smis-aj+,* if it belongs here at all, perhaps shows the late dialect morphological stem-forming rule that produces *-vyc-aj+* 'learn' (cf. *-uč-i+*) and *sъ-teȝ-aj+* 'gain' (cf. *-teg-nǫ+*) that was touched on above (p. 24 and note 71).

Vьsь is indeed a problem. The mixed declension is striking:

	Hard	*vьsь*		Soft	
N sg m	tъ		vьsь	sь	našь
G	togo		vьsego	sego	našego
I	těmь	vьsěmь		simь	našimь
N pl m	ti		vьsi	si	naši
GL pl	těxъ	vьsěxъ		sixъ	našixъ
D pl	těmъ	vьsěmъ		simъ	našimъ
I pl	těmi	vьsěmi		simi	našimi

All other forms agree with *sь* and *našь* as well as nouns like *otьсь* or *otьčь* where the "soft" stem goes back to **k̂/*ĝ* of BdC or else *j.* If **wix-* is the old stem, then N pl m and the four *ě*-forms seem to show the effects of KAI: **wix-aimi > vьsěmь.* Thus, the argument runs (so Van Wijk, § 17), KAI operated first, then BdC affected such forms as neuter **wixo,* G **wixaga > *wiśa, * wiśaga,* adjusting then to *vьse, vьsego.*[123] The same logic, however, should produce OCS "otьсěxъ" and the like, but no trace of such forms is found. Van Wijk believes the pronoun less likely to yield to analogy: "Dass ein Paradigma *vьsь, -ego, -emu, -itь, -emь* usw. seine *-i-*Kasus unter dem Einfluss der harten Stämme (*těmь* usw.) aufgegeben habe, ist angesichts *sь, sego, semu, simь, semь* usw. unannehmbar."[124] Why unacceptable? On the contrary, pronouns are far more likely to develop peculiar innovations along with haphazard rearrangements of old materials, and Slavic *sь* itself is synchronically difficult and historically peculiar. There is no obvious reason it should take soft endings; in trying to give a systematic generative account I was forced to posit a special underlying phoneme /ś/ for this single pronoun (*Gram.* E 18.82). An IE stem **k̂-* should yield hard *s-* and require hard desinences. Lithuanian seems to show also a second stem **k̂j-;* this should give Slavic *š,* but Slavic responds rather with

sij-/sьj-, which looks like *ќei-*. In short, the paradigm of *sь* must be the result of prehistoric readjustments. Still, some of those adjustments may have to do with a rearrangement of front-vowel and back-vowel desinences. The stem *vьs-* appears in Old Czech as *vš-* < *vьš-*, with the same hard-soft declensional mixture as in OCS. *Vš-* is the base for all other WSl forms, though in most dialects the stem has been extended by means of various suffixes, e.g. Pol. *wszystek*. This seems to be at least partly in accord with the *š* which occurs from *-x-* before *ai-* desinences in some dialects. Thus scholars concluded that BdC and KAI conspired to produce these forms by the same processes in all dialects.

However, it has long been known that two old Novgorod documents attest *vьx-*: an A sg f *vxu (u < *ǫ)* and a N sg m *vxe* (with the *e* for masc. *-ъ* or *-ь* that is common enough in old Novgorod texts, though hard to explain), and David Savignac proposes six more cases: A sg n *voxo* (for *vьxo,* OCS *vьse),* G sg m *vьxogo* (not unassailable; from a birchbark writ), N pl m *voxi* for *vьxi* (resisting KAI as well as any possible action of BdC), [124a] G pl *vxyxъ* (OCS *vьsěxъ; -y* as replacement for pronominal *ě* is plausible; the reading is not certain, however; birchbark writ), D pl *vьxemo* (OCS *vьsěmъ* "e" for *ě* and "o" for *ъ* normal in the semi-literate spellings of birchbark writs). Without attempting further speculation about details, I merely contend that the explanation for all the variants is to be found (1) in the hypothesis that BdC applied only to *k* and *g* and not to whatever fricative was developing from **s* in the earliest Slavic, and (2) in the hypothesis that the early Slavic pronouns represented in OCS by *sь* and *vьsь* had idiosyncratic declensions that we cannot recover. Speculation must deal with hypothetical early Slavic **wiX-* and **wis-* both as possibilites, for the etymology of this pronoun is still unknown.

If the Greek place-names whose phonetics indicate **ќ* or **ć* from BdC in the language of the southernmost Slavs in the 7th-8th century, and the borrowing of names on the northeastern rim of Rus suggests that KI was still operative in the 8th century, we still lack any point of support for absolute chronology. The Germanic borrowings are equivocal. *Kъnęʒь* could have been very early; **mosęʒь* implies pre-umlaut Germanic, thus probably before about 700. The historical form of *pěnęʒь* imlies post-umlaut borrowing, but since the word was crucial to inter-tribal commerce, an older **pʲāʹniNʒ́-* cannot be excluded, with modification of the vocalism because of later constant German influence.[125] **Vitęʒь* takes us into the eighth century. By this time there well may have been a pattern for adaptation of suffixes of this shape, established by earlier borrowings.[126] In any case, the Slavic dialects had not yet become hospitable to this kind of sequence of segments.

BdC may have started as far back as the 2nd or 3rd century, or not until the 7th. Yet we must bear in mind that we cannot date the final phase of the change of IE *k̑/*g̑ to Slavic *s/*z, nor the backing of IE *s to early Slavic *X – changes I connect with the time of BdC – nor yet the subsequent split of *X to late Common Slavic and OCS š and x. It is well known that Lithuanian shows a remarkable resemblance in many words and morphemes to the formulas we posit for IE of two thousand or more years ago. I suggest that Slavic too was very conservative until the very rapid expansion of the Slavic tribes starting about 500. We may speculate that BdC was still productive even after KI began to operate, but this too fails to provide an absolute date. From 500 to 800 we can posit KI early and KAI late. The OCS state of affairs must have been reached by the early ninth century, but already the weakening of the jers was beginning, and the newly-achieved open-syllable structure was starting to change. But let me emphasize once again that there is *no* objective evidence for dating; we can only speculate.

To summarize: the historical order of the Slavic palatalizations is (1) BdC, (2) KI, and (3) KAI. BdC took place in the transitional period when the language could be taken either as a dialect of late IE or a new structure, early Common Slavic. Like the shift of IE *s to earliest Slavic *X and the adjustment of vowels to a preceding palatal, BdC was a progressive assimilation, and is to be attributed to a period – very likely a long one – when all these developments took place and established Slavic as essentially different from Baltic.

BdC affected only the velar stop *k and possibly *g; the non-apical fricative *X which had resulted from a positional variant of *s after *i u r k* was not distinctively a velar and thus did not shift from velar to palatal articulation. The forms of the pronoun vьsь 'all' are related in part to adjustments in the distribution of the three fricatives *s š x* and their variants in different parts of the Slavic world at a relatively late date, and in part to the evolution of individual pronominal stems, in particular sь 'this'. BdC took place throughout the major noun declensions (masculine and neuter *o*- and *yo*-stems and feminine *ā*- and *yā*-stems), wherever the stem ended in *k (and perhaps *g). In fact there appear to have been no roots in Cĭk- except *līka > lice; in practice BdC affected suffixal k. Forms in *iNg- hardly existed, but some borrowings fitted the pattern. In verbs, only a small number of roots, under special ablaut conditions, could fit the BdC formula, but they generated a few instances of *k which, in conjunction with purely morphological (or rather derivational) conditions, gave rise to a verb-derivational alternation of k/g with k̑/g̑ which was generalized to fit x' (alternating with s or š according to dialect) under the same circumstances.

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As a productive process, BdC surely was finished long before OCS was written down, but the alternations established in the early period continued to operate in some derivational patterns. The new *k/*$\acute{g}$ produced by the KAI palatalization brought about a very different distribution of *k/*$\acute{ʒ}$ *(or* *$\acute{z}$)* that must have caused fundamental restructuring.

POSTSCRIPT

The conclusion that the progressive palatalization was an early process calls for a reexamination of the whole series of other major changes which affected a late Indo-European dialect system and eventually resulted in the system of late Common Slavic observable in Old Church Slavonic. While the major points were at least mentioned above, it is worth reviewing them somewhat more comprehensively.

The language called Indo-European, the hypothetical common ancestor of Baltic, Slavic and such attested ancient languages as Hittite, Sanskrit, and Greek, cannot have existed much after 2000 B.C. In the very long period to about 500 A.D., when we can be fairly confident that speakers of Baltic and Slavic (or Pre-Baltic and Pre-Slavic) lived in northeastern Europe, the phonological and morpological systems of the IE dialects underwent fundamental changes, but nonetheless the relationship of the cognate systems from India to Ireland remains visible.

There is no unambiguous evidence for separating out the various stages in this long development, and terminology for describing the hypothetical succession of presumed prehistoric synchronic systems can only be conventional. I shall use the terms *Pre-Slavic* and *Pre-Baltic* to indicate late IE dialects, and *Proto-Slavic* to denote the earliest specifically Slavic systems. *Common Slavic* then refers to the more clearly definable stages down to and including OCS, which I regard as a type of late Common Slavic dialect which is at the same time a hybridized early east Balkan, or South, Slavic dialect that can be called Bulgaro-Macedonian (as opposed to Serbo-Croatian plus Slovenian or west Balkan Slavic). For the purposes of this discussion, it is not necessary to consider the question of a more or less unified Balto–Slavic system.

The relatively large IE inventory of consonantal segments was greatly reduced by processes which presumably took place before the emergence of recognizable Baltic or Slavic dialects. The laryngeal consonants, partly retained in Hittite, were surely lost in Pre-Slavic in very ancient times, though they left traces in the vowel system.[127] The five-place system of stops with its three-way opposition of tenuis vs. media vs. aspirated media[128] was reduced by the merger of labialized and plain velars (e.g. $k^w > k$), and of aspirated and non-aspirated mediae (e.g. $gh > g$). Schematically:

$$p \; b \; bh \quad t \; d \; dh \quad \acute{k} \; \acute{g} \; \acute{g}h \quad k \; g \; gh \quad k^w \; g^w \; g^wh$$
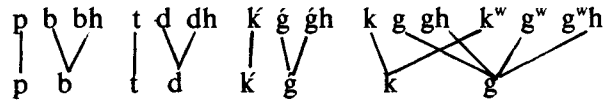
The single fricative s (with its rare variant z) was retained, as were the sonorants $r \; l \; m \; n \; j \; w$.

The vowel system surely was the basic triangle $\bar{\iota} \; \bar{e} \; \bar{a} \; \bar{o} \; \bar{u}$; the vocalic reflex of laryngeals had merged with short a. Further, the sonorants probably could function as syllabics; one can safely assume that in many dialects there was complex morphophonemic interplay between the glides j and w on the one hand and the vowels i and u on the other. Non-high vowels followed by sonorants provided diphthongs.

The exact character of the accentual systems of Proto-Slavic and Common Slavic is not at all clear, despite the great progress that has been made in recent decades.[129] What is important here is that the quality of vowels and consonants in the prehistoric period was not affected either by the putative characteristics of inherent tone-marking or by the position of stress within a word.[130] Thus one can safely omit any consideration of accentual features in discussing the processes we are reviewing here.

The system assumed for the late IE dialect underlying Pre-Slavic and Pre-Baltic is then:

$$
\begin{array}{llllll}
p \; b & m & w & \breve{\bar{\imath}} & & \breve{\bar{u}} \\
t \; d \; s \; (z) \; n \; l \; r & & & & \breve{\bar{e}} & \breve{\bar{o}} \\
\acute{k} \; \acute{g} & & j & & \breve{\bar{a}} & \\
k \; g & & & & &
\end{array}
$$
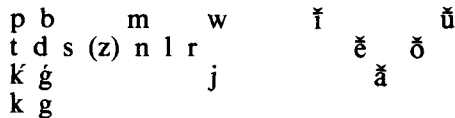
Syllabic liquids and nasals very early developed a phonetic svarabhakti i or u (TRT > TiRT/TuRT); the exact conditions are obscure, but on the whole u was inserted after velars, i elsewhere. However, it ap-

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pears that the *u* then became part of the underlying shape of words in Proto-Slavic, while for most of the period up to late Common Slavic *i* may have been inserted by synchronic rule: $\emptyset > i \ / C - RC$ (where R stands for *r l m n*). Surface contrasts of the type KiRT vs. KuRT must be assumed for the stage when KI was active, cf. OCS *črьn-* 'black' vs. *krьm-i+* 'nourish' < **kirn-* vs. **kurm-*, which may well have represented /krn-/ vs. /kurm-/.[131] Despite the continued productivity of the rule inserting *i*, it seems probable that historically the *i/u* had developed in the earliest Proto-Slavic. For the action of BdC, I assume strings like *mēsinkaX* (> *mēsęcь)*, whether this is itself to be viewed as the underlying form, or an intermediate generative stage produced by the CRC rule from /mēs-n-kaX/.

Two changes are to be assigned to the period when IE dialects became more specifically Pre-Slavic and Pre-Baltic: the shift of *s* after *i u r k* (known to Jakobson's students as the *ruki-rule*), and the assibillation and de-affrication of **k̂* and **ĝ*.

For Pre-Slavic, we must assume that **k̂/*ĝ* developed hissing affrication, becoming **t̂/*d̂* (cf. note 80, above), then **ć/*ʒ́* and **c/*ʒ* and finally *s/z*. There is no evidence to help us estimate whether these processes proceeded rapidly or slowly. It is clear, however, that the *ruki*–rule applied in Pre-Slavic before the final emergence of *s/z* < **k̂/*ĝ*.

BdC could have happened at any time after older **k̂/*ĝ* had become affricated. Thus if we compare the old formulas corresponding to OCS *pьsati* 'to write', **pьxati* 'to pound', **sьcati* 'to urinate' and **pьšeno* 'millet', we can posit four stages: (1) before **k̂* has finally become **s*, (2) when **s* has been modified after *i u r k* but not yet split into **š* vs. **x* (the unit I symbolize as **X*), (3) **k̂* has merged with inherited **s*, (4) **X* has become *š* and *x*.

1.	*piK̂ātei	*pisātei	*sikātei	*pisena
	*picātei			
2.	”	*piXātei	*sikātei	*piXena
3.	*pisātei	”	”	”
4.	”	*pixātei	”	*pišena
OCS	pьsati	*pьxati	*sьcati	*pьšeno

If BdC indeed happened as early as this table implies, earliest Proto-Slavic would already have palatal consonants, and perhaps even coexisting palatal stops **k̂/*ĝ* and dental affricates **ć/*ʒ́* – a type of system to be recreated again and again in the history of many Slavic

dialects. At any rate, BdC could have been effective as early as the second stage.

While the chronological order for Pre–Slavic is (1) *ruki*–rule, (2) deaffrication of *$\hat{k}$/*$\hat{g}$, there is no evidence for the ordering in Pre–Baltic. IE *$\hat{k}$/*$\hat{g}$ surely became hissing affricates *č/*ǯ and later š/ž, but the reflex of *s after *i u r k* was also *š. Thus the formulas *pikātei and *pisātei would both have yielded early Baltic *pišātei, and there is no way to determine which would have arrived first at this shape.[132]
Another difference between Baltic and Slavic is that Common Slavic had completely merged *ŏ and *ă. No evidence at all helps date this merger. It is clear from relatively late comparisons that the short Slavic *a tended to be rounded (therefore corresponding to the o of some non–Slavic languages as well as of historical Slavic dialects), while long *ā was not. In the absence of arguments either way, I am inclined to believe that the merger was much earlier than this evidence, and I therefore posit for Proto–Slavic the vowel system *ĭ *ĕ *ў̆ *ă, defined by the features / ± high/ and / ± back/; specifications in terms of rounding and lowness were non-distinctive (cf. note 17 above).

IE words frequently ended in consonants; late Common Slavic words could end only in vowels. The loss of IE consonants very likely occurred in stages, but this is a matter for speculation.
Only a few IE consonants could stand in word-final position. Most important were the fricative *s and the nasals *m and *n, while *r and the dental stops *t and *d were more restricted. Slavic and Baltic offer no information about other possible word-final consonants.
Final *d occurred in a few desinences (e. g. NA sg pronoun *tod, *k^wid, o-stem Ablative sg *–ōd), and was lost without trace, cf. OCS to, čь–to, Gen vlьka.[133] Final *t surely occurred in certain verbal desinences (e.g. 3 sg aor *nek-e-t > OCS nese), but since the entire verbal system was fundamentally restructured – possibly several times – it is impossible to say more than that *t was eventually lost. Internal reconstruction based on the OCS data of aorists and imperfects makes it plausible to posit underlying final t in certain forms (cf. *Gram.* 196–172), but such forms cannot be considered to belong to a very old *état de langue*.[134] Thus, though there is no unambiguous evidence, we may speculate that word-final *d could have been lost early, but that *t remained nearly to the end of the pre-historic period.[135]
IE word-final consonants were of course usually desinences or parts of desinences, and therefore subject to special processes involving morphological factors. On the purely phonological level, the distinction between final *m and *n disappeared, and the resulting *N was later lost or else merged with the preceding vowel to form a nasal vowel. The

ruki-rule affected original **s* in many desinences very early, but the **X* was apparently generalized to replace every desinential **s* (but see note 76 above). Eventually final **X* was lost.

Word-final **N* and **X* seem to have conditioned the raising or narrowing of a preceding non-high vowel. Thus the **-on* of 1 sg aorist appears in OCS as -ъ, e.g. *padъ*, and the 1 plural desinence -*mъ* surely goes back to IE **-mos*. Thus approximately: **-on* > **-aN* > **-yN* > **-y* > -*ъ; *-os* > **-aX* > **-yX* > **-y* > -*ъ*.[136] It is certain that **N* was lost after short **i* and **u* probably at a relatively early date; cf. A sg **ghostim* > **gastiN* > OCS *gostь* 'guest', and **sūnum* > **sȳnyN* > *synъ* 'son'.[137] With *o*-stems, the rules already given allow us to assume the regular development from IE Nom **-os* and A **-om*, both yielding ъ. It cannot be excluded, however, that the reflex of the N **-os* was replaced by the accusative desinence or the *u*-stem desinence at some stage. In the NA neuter, IE **-om* should have yielded OCS **-ъ*. The attested -*o* (with its fronted variant -*e*) of all Slavic dialects has traditionally (Leskien 50), been attributed to a replacement from the pronominal declension, e.g. *t-o* < **t-ad*, reinforced perhaps by the NA of the *s*-stems like *nebo* or *slovo*: **nebas, *slawas*, underlyingly /neb-as + Ø/, /slaw-as + Ø /, where the -*es*- suffix appears in *o*-grade.[138]

Raising must also be assumed in the history of the desinences which are attested in OCS as -*y/-ę*: G sg f and NA pl f (e.g. *ženy, dušę*) which most plausibly can be viewed as older **-āns*, and A pl m (*duxy, nožę*) plus the N sg m present active participle (e.g. *nesy, vežę*), both presumably IE **-ons*. The immediate ancestor must have been middle Common Slavic **-ȳN ~ *-īN*, with a rule to delete **N* after a high back vowel, while *non-back vowel + *N* converts to the front nasal vowel *ę*.[139] In generative terms, positing -*anx* (cf. the paradigms on p. 17 and in note 22) will achieve the desired results, along with a rule lengthening a vowel in position before *N*. This nicely corresponds to the expected A pl of *o*-stems **-ons* or **-ōns* (cf. Vaillant 1958a 34) and the participial **-ons* or **-ōns* representing older and/or underlying **-onts* (Vaillant 1958a 542-3), with the proviso that we state that internal reconstruction does not allow us to determine the original vowel length. The traditional explanation for the identity of NA pl and G sg in the feminines must apply: **-āns* of A pl has replaced **-ās* of both N pl and G sg (Vaillant 1958a 81, 83).

Yet the need for the raising rule calls for reexamination of the process of generalization of these desinences. If **-aX* raised to **-yX*, why not assume also that **-äX* became **-ȳX?* The IE desinences of both G sg and N pl f are **-ās*, which should give Proto-Slavic **-āX*. Raising would produce **-ȳX*, and, after non-palatal consonant, OCS -*y*. This is

precisely the result we wish to achieve. It is the palatal stems which cause the difficulty, for *-ȳX should front to *-īX and yield "-ī", e.g. "duši". I submit that the surface restructuring applied only to palatal stems, whereby Gsg/Npl *daušī (parallel to ženȳ) was replaced by the form *daušīN precisely because of the parallel *ženȳ, surely during the period when *-ȳN could optionally be pronounced *-ȳ. The contrasting sets *dauší ≅ *ženȳ vs. *daušīN ≅ *ženȳ(N) were replaced by daušīN ≅ *ženȳ(N).[140]

In the southern dialects of Common Slavic, word-final *-īN developed in such a fashion as to fall together with *-eN, as in OCS sěmę 'seed' < semen. This means that the high nasal vowel *į gradually lowered, in accord with the universal tendency for front nasal vowels. In the northern dialects, however, *-īN in desinences is represented by -ě (thus OR, OCz dušě, but OCS dušę), and contrasts with the reflex of *-eN (OR, OCz sěmä, P siemię). We assume that *-īN became closed nasal ę and then lost nasality, perhaps to reduce the contrast to the parallel desinence -y.[141]

In sum, then, the expected reflexes of both IE *-āns and *-ās in Common Slavic would be *-ȳ after non–palatal consonants, but *-īN versus *-ī after palatals. The *-ī was analogically replaced by *-īN, a surface change that could be interpreted as an underlying substitution of *-anX (already present for A pl) for inherited *-āX.

The northern reflexes of the N sg m participial forms are problematical, not least because the evidence for Lechitic is uncertain. At least for Czech and East Slavic I assume the types nesa and stojä. This implies that *-ons (> PSl *-anX) developed regularly to *-ę after palatal yielding -ä after denasalization. The -a of non-palatal stems, however, seems to have nothing to do with older *-anX. It is possible to attribute it to a very late generalization based on -ä.[142]

The masculine-neuter instrumental plural desinence -y/-i requires *ȳ/*-ī as the immediate ancestor. If IE *-ōis is the source, it would yield Proto-Slavic *āiX. This is apparently a unique sequence, and the *i can be deleted by an ad hoc rule. We must assume that this happened before the shortening of *āi to *ai (see below). The resulting *-āX then raised to *--ȳX (later fronted after palatal to *-īX), yielding the attested forms. More plausible, however, is to postulate that early Slavic *-āX goes back to an IE *-ōs that was not specifically instrumental.

The OCS imperatives of the type nesi nesěte imply an underlying imperative marker which will yield word-final *ī but internal *ě; IE evidence indicates *oi (ultimately a combination of thematic *o plus *i). Nominative plural masculine -i, with no variation for palatal stems but

with KAI-palatalizing effect, also stands where IE indicates *-oi. For singular imperative, a final person-marker *s is plausible for IE dialects, and for N pl a plural-marker *s is entirely reasonable. The diphthong *oi, Proto-Slavic *ai, regularly gives OCS ě, as in L sg m otročě < *atrakai. Positing *-ois (> *aiX in *atrakaiX) offers a reason for a different development, and the raising-rule suggests the manner of change: *-aiX became *-yiX. This unique diphthong would then yield *ī by assimilation of the first component to the second: *atrakaiX > *atrakyiX > *atrakī > otroci. It is better, however, to assume with Velčeva (35, 53) that *ai everywhere became open *ě, which before *-X would raise to *ī: *-kaiX > *-kěX > *-kīX > -ci. This monophthongization must have been later than fronting (so N pl *atikaiX > *atikeiX, parallel to L sg *atikai > *atikei) but before the monophthongization of *ei to *ī (thus otьci for both forms). It requires a period when N pl *atikeiX coexisted with L pl *atrakěX. (Questions of monophthongization will be discussed in more detail below.)

The raising-process before *N applied only to short vowels, for while *aN yields -ь, the A sg IE desinence *-ām would give Proto-Slavic *-āN and the nasal quality survives in OCS -ǫ.[143] OCS provides no internal evidence at all for the reconstruction of final short *-aN. Historically, then, we may posit that raising before word-final *N and then loss of *N were early:

$$\text{VR}^1 \quad \begin{bmatrix} \text{V} \\ +\text{back} \\ -\text{long} \end{bmatrix} \; > \quad [+\text{high}] \; / - \text{N} \#$$

A second Vowel-Raising rule can be formulated to cover -aX, -āX, -aiX, -āiX, -aNX and -āNX:

$$\text{VR}^2 \quad \begin{bmatrix} \text{V} \\ +\text{back} \end{bmatrix} \; > \; [+\text{high}] \; / - ([+\text{sonorant}]) \begin{bmatrix} -\text{syllabic} \\ +\text{contin} \end{bmatrix}$$

How long a period it took for the various elements of this summary formula to be assembled remains speculative.[144] What is important is that the final loss of *X must have been subsequent to this series of raisings.

Loss of final *N after high short vowels was probably prior to its loss after *ȳ, and there may well have been a considerable time period between the two.[145] I assume then a sequence VR¹, Nasal-Loss 1, VR², Nasal-Loss 2 and, finally, the process *-āN > *ą (> OCS ǫ) as part of the quite late series of monophthongizations.

Another instance of raising has nothing to do with any other process discussed here, viz. the *e of the IE diphthong *ei was raised if a vowel followed: *treies > *trejeX > *trijeX > OCS trьje/trije 'three (m)'. It is probably ancient, and in any case precedes Vowel Adjustment; see note 75.

The phonetic process whereby the second element of an oral diphthong became a glide before a following vowel is doubtless Pre-Slavic or earlier, but the rule applied productively to underlying representations throughout the whole period. Thus one may posit /pai-e-te/ for pojete 'you sing' and /pai-tei/ (or later /pai-tī/) for pěti 'sing (inf.)' right down to OCS.

In the discussion of KI, attention was focussed on the fact that the first stage produced palatal stops, and only then did hushing affrication develop. It is highly possible that the two stages happened very close together, and a single rule can be formulated:

$$\text{KI} \quad \begin{bmatrix} \text{C} \\ +\text{high} \\ -\text{labial} \\ \langle -\text{continuant} \rangle \end{bmatrix} > \begin{bmatrix} -\text{back} \\ -\text{anterior} \\ +\text{coronal} \\ \langle +\text{affricate} \rangle \end{bmatrix} \Big/ - \begin{bmatrix} -\text{consonant} \\ -\text{back} \end{bmatrix}$$

This formulation assures that *X must appear as *š before front vowels and *j.[146] A subsequent rule must change *ǯ to *ž except after continuant, i.e. in the group *žǯ.[147]

I have assumed that *X originally differed from *s only by being /+high/; one may speculate that it became /-anterior/ almost at once, but varied contextually as /±coronal/ for a fairly long period, and if /-coronal/ it could also become /+back/. The palatal variants were surely favored in the vicinity of front vowels, the velar elsewhere. It is probable that the patterning of stops at the beginning of KI reinforced this tendency, but without yet assuring a split between /š/ and /x/. Before *e and *a, [se] and [še], [sa] and [xa ~ xa] maintained only the opposition between /s/ and /X/.

The rules of Vowel Adjustment must have applied after the completion of KI. Assuming specification of *ē/*ā as /+low/ but of *e/*a as /-low/ (cf. note 60), we may formulate the rules thus:

$$VA^1 \quad \begin{bmatrix} V \\ -low \end{bmatrix} \quad > \quad [-back] \quad / \quad \begin{bmatrix} -syll \\ +high \\ -back \end{bmatrix} \quad \underline{\qquad}$$

$$VA^2 \quad \begin{bmatrix} V \\ +low \end{bmatrix} \quad > \quad [+back] \quad / \quad \begin{bmatrix} -syll \\ +high \\ -back \end{bmatrix} \quad \underline{\qquad}$$

(Although there is no evidence to assume different dating, I prefer to keep the two processes separate despite the obvious simplicity of writing a single rule.)

Take, for example, the vocatives of *awik-ā and *atik-aX, the infinitive 'to lie', and the genitive of *krāj-aX:

	*awika	*atike	*legětei	*krājā
BdC	awika	atike	–	–
KI	–	atiče	ležětei	–
VA	awiḱe	–	ležātei	–
OCS	ovьce	otьče	ležati	kraja

If VA applied before KI, we should have "ovьče" like otьče, and "ležěti".[148]

After the completion of VA, the phonetic syllables *kā, *ḱā/*ćā, and *čā were in contrast, though otherwise *k could occur only before back vowels (*ka, *ky, *kȳ), while *ḱ/*ć and *č both could stand only before front vowels (*e *ě *i *ĭ). Further, older /Xā/ and /Xě/ became [xā] and [šā], both distinct from [sā], and thus *X finally split into two underlying units, /x/ and /š/. The loss of *j after palatal further increased the occurrence of the k vs. č contrast. Take, for example, the history of the G sg masc otroka and its corresponding possessive otroča, N sg ovьca and poss. adj. ovьča, and G sg of časъ:

	*atrakā	*atrakiā	*awikā	*awikaī	*kěsā
BdC	–	atraḱiā	awiḱā	awiḱiā	–
KI	–	atračjā	–	awičjā	čěsā
VA	–	–	–	–	čāsā
OCS	otroka	otroča	ovьca	ovьča	časa

(Iod-formation could take place at any stage; iod-loss cannot be prior to KI. The G sg can be posited as *-āD, with consonant-loss at any stage.)

The numerous diphthongs posited for Proto-Slavic had all been eliminated in the dialects underlying OCS. It is possible that nasal diphthongs were retained in some dialects of the time (e.g. Lechitic), but the Common Slavic drift toward exclusively open syllables was probably accomplished completely in most areas. My proposals concerning the progressive palatalization have no bearing on accepted views and well-known controversies concerning the late date of the elimination of the liquid diphthongs (*tart and the like) and the nasal diphthongs, and I shall therefore not discuss these matters here. Nor is the early date of the elimination of inherited *eu and *ēu of significance; I shall deal only with *ai, *au, and *ei, along with their long counterparts *āi, *āu, and *ēi.

Although there is reasonable evidence that long diphthongs contrasted to short ones in Pre–Slavic and perhaps Proto-Slavic, it seems probable that the difference was lost in Common Slavic. A contrast between o-stem and ā-stem locatives, *-oi vs. *-āi would thus yield Slavic *ai vs. *āi, if these indeed were the old desinences. Both appear as -ě in OCS (-i after palatals). The feminine locative after the action of BdC would have been *awiKāi. I propose that *āi (and *ēi and *āu) merged with *ai (*ei, *au) before the period of Vowel Adjustment, so that it is the form *awiKai that regularly becomes *awiKei (> OCS ovьci). Otherwise, *awiKāi would not be affected by VA, and the -i of OCS would have to be explained by some sort of analogy.[149] Assuming earlier loss of the length–distinction in diphthongs provides a simpler account.[150]

It is certain that the monophthongization of *ai created the new *ē and *ī which triggered KAI. These new instances of *ē and *ī, along with *ī > *ei, meant a change in the distribution of long vowels, but created no new units. Perhaps they developed earlier than the monophthongization of *au to the new *ū which decisively changed the inventory (see also note 86). It is quite possible that the new surface *ū represented underlying /au/ or /aw/ for quite an extended period, indeed up to the weakening of the jers and perhaps the early stages of the phonetic loss of weak jers. External evidence for the chronology has already been discussed in note 97.

Table II gives some examples to illustrate the changes which can be clearly put in sequence. Loss of final obstruents must have occurred after Raising, and loss of post-consonantal *j after Kĭ, but no other position is clearly indicated for either rule and their action is tacitly assumed in the table. A single line subsumes the results of the surely complex processes of monophthongization, including the nasal diphthongs but leaving aside the liquid diphthongs.

TABLE II

	Nom sg masc			Acc pl masc			Inst pl masc		
	*atrakas	*atikas	*atikias	*atrakans	*atikans	*atikians	*atrakās	*atikās	*atikiās
BdC	-	ě	-	-	ě	-	-	ě	-
Raise	y	y	y	y	y	y	ȳ	ȳ	ȳ
KI	-	-	ъ	-	-	ъ	-	-	ъ
VA	-	i	i	-	i	i	-	ī	ī
Mono	-	-	-	ȳ	į	į	-	-	-
KAI	-	-	-	-	-	-	-	-	-
OCS	otrokъ	otьcь	otьčь	otroky	otьcę	otьčę	otroky	otьci	otьči

	Loc sg masc				Nom pl masc			
	*stalai	*atrakai	*atikai	*atikiai	*stalais	*atrakais	*atikais	*atikiais
BdC	-	-	ě	-	-	-	ě	-
Raise	-	-	-	-	yi	yi	yi	yi
KI	-	-	-	ъ	-	-	-	ъ
VA	-	-	ei	ei	-	-	ii	ii
Mono	ē	ē	ī	ī	ī	ī	ī	ī
KAI	-	ě	-	-	-	ě	-	-
OCS	stolě	otrocě	otьci	otьči	stoli	otroci	otьci	otьči

Scholars regularly speak of Proto-Slavic and Common Slavic *j (or *i̯) in post-consonantal position, but no corresponding segment is to be found in OCS (and presumably other dialects of the time). We will not pause to examine the sources of *j: in some formations one may simply posit it, and in others *i (or *i̯) followed by vowel is more plausible. At any rate, it seems to have occurred after all consonants, and we must assume that it affected a preceding consonant before it disappeared.

For late Common Slavic, phonetic palatal sonorants must be posited, but nothing forces one to conclude that thay were underlying segments rather than /lj rj nj/ or sonorant plus /i/ plus vowel. Nor is it entirely clear when the sequences *sj or *xj and *zj were replaced by the units *š and *ž, though there is no reason to doubt that the change was complete by the 9th century for all dialects. The relative chronology of the developments is not revealed by other elements in the system.

OCS itself shows dialect variation in the reflexes of *j after labial. While the language of Cyril and Methodius surely regularly had pl̦, bl̦, ml̦ and vl̦ (corresponding to Serbo-Slovenian and East Slavic of later

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date),[151] the language of the 11th-c. scribes apparently had *pj bj mj vj*, which can be regarded as representing conservation of old groups with iod in some areas but loss of the epenthetic *l* and reversion to iod in others.[152]

The divergent development of the *tj* and *dj* groups is of fundamental importance in the consonantism of Slavic dialectal development in late Common Slavic and perhaps considerably earlier. Here I shall mention only the major points in order to outline questions which require answers.

For the dialects of the 8th-9th century, we may assume that *tj* and *dj* had developed four sets of reflexes, characteristic of East Slavic, West Slavic, Southwest (or West Balkan) Slavic, and Southeast (or East Balkan) Slavic.

	East	West	SW	SE
*tj	č	ć	ḱ	šč
*dj	ǯ	ʒ́	ǵ	žǯ

In the two northern areas, these reflexes fell together with those of one of the earlier velar palatalizations: in East Slavic with KI, in West Slavic with BdC and KAI. In Proto-Serbo-Slovenian, new palatal stops developed (though *ǵ* > *j* early in the west, probably in the 9th-10th c.). These three sets of reflexes have in common the reduction of two-segment sequences to single units.

OCS, however, with later Macedonian and Bulgarian, shows two units: the reflexes of *tj/*dj* have merged with those of *stj/*zdj* and also *skj/zgj*, e.g. *osvěščaj+* like *ispuščaj+* but *osvěti+* vs. *ispusti+*.

The simplest assumption would be that all dialects shared a first step from *tj/*dj* to *ḱj/*ǵj*. Then the *j* assimilates to the preceding consonant (giving *ḱḱ/*ǵǵ*), which in turn either spirantizes (*šḱ/*žǵ*) or simply drops; whereupon the single palatal remains or else moves toward *č/ǯ* or *ć/ʒ́*.[153] However, a stage with geminate palatals is not required everywere. East Slavic, for example, might well have developed a spirant *x́/ɣ́* from *j* after *t/*d* followed by fusion of the groups *tx́/dɣ́* to the unit affricates *č/ǯ*. For West Slavic, the problem is to postulate a sequence of changes whereby *tj/*dj* developed to hushing affricates after a fricative, but hissing affricates otherwise. Thus *stj/*zdj* develop to *šč/*žǯ* indistinguishable from the reflexes of *sk/*zg* from KI, but otherwise *tj/dj* > *ć/ʒ́*. Thus *plaću* 'I pay' from *plati+*, but *pušču* 'I release' from *pusti+*, and *plaču* 'I weep' from *plaka+*.[154] I will refrain from speculation on just what the phonetic processes might have been.

Many questions remain to be answered. If all Common Slavic dialects already had both phonetic dental affricates *ć/*ʒ́ from BdC and palatal affricates *č/*ǯ from KI before *tj/*dj began to undergo palatalization, what was the motivation for the divergent changes? Since Polish, Kashubian, and Sorbian data indicate only šč/žǯ (with subsequent local modifications) for *sk/*zg in KAI,[156] must we conclude that all of West Slavic behaved like Old Czech? Does the *cokanje* of 11th-12th c. Novogorod and Pskov manuscripts indicate possible West Slavic influences, or purely internal dialectal developments?[157] Finally, although palatalization of various kinds is so common a phenomenon in European languages, very little attention has been paid to precisely which processes operate in what sort of linguistic system.[158] More typological work must be done. Detailed phonetic facts must be established for many dialects; the facts must then be examined within the frameworks of the various morphological systems where they occur, and all this must be related to specific hypotheses about distinctive features – or other theoretical postulates about how phonology works and how languages change.

Addendum.

On ě versus a.

No one has questioned that fronting affected Common Slavic high vowels and short *a, but the relationship of long *ā and *ē, which is to say OCS ě and a, has been viewed in contradictory ways by scholars in the last half-century. Two environments must be distinguished: I. after *j and the hushing consonants *č, *š, *ž, *šč, *žǯ (OCS št, žd); II. after *c/*ʒ. Scholars like Leskien, Vondrák, Meillet, Kul'bakin, Diels and Van Wijk (78) unanimously assumed that only *ā could stand in position I, e.g. *struja, čaša, *medja > *meža*. It was Trubetzkoy who, following the logic of his theoretical premises about the nature of the phonological units he posited, declared that his "Proto-OCS" had to have a front vowel in position I, therefore *dušä* and the like. He recognized that this decision was contrary to the evidence of OCS spelling (64-65). (Incidentally, it is by no means certain that he would have applied this rule to all 9th-c. dialects –– he is dealing here only with what he believed to have been the original language of Cyril.) Yet he follows OCS spelling in declaring *ä* and *a* (in traditional notation *ě* and *a*) to be in distinctive contrast in position II: *mǫčenica* vs. *mǫčenicě*. Van Wijk saw only *a* in pos. I but only *ě* in pos. II; although he does not say so, this means that *mǫčenicě* would be an ambiguous form.

Vaillant seems to have been the first to generalize the process of fronting to apply to *ā in both positions, apparently for all of Slavic, presumably ca. 8th c. Since this contradicts the attested spellings of OCS as well as most other early data from all parts of the Slavic world, it becomes necessary to make a second assumption, namely reversion of ě (or ä) to a, with local dialect variations. There is no way to prove or disprove this putative sequence of events: what is important is to recognize that it is not directly attested, but rests on the assumptions of the investigator. Now, it is well known that long vowels in many observed systems do not behave exactly like their short counterparts. Why should one assume a change here, purely for the sake of symmetry, and then be forced to assume a second change in order to account for the real data?

The evidence of OSC spelling systems affirms the opposition of ě to a in position II, but lack of opposition in position I. Phonologically, this means neutralization of the front–back contrast in the long non-high vowels; Trubetzkoy's discussion shows he was fully aware of this fact. What is at issue is not the contrast of two fully-defined units ě and a, but the relevance or lack of relevance of *one* distinctive feature in specific environments. Both ě and a are to be defined as /–high + tense/, with /–rounded/ automatically supplied; the difference is that ě is /–back/ whereas a is /+back/. For most environments, including position II, the feature /back/ MUST be specified as plus or minus. In position I, however, the degree of fronting did not matter: pronunciation very likely varied.

At this point we must make a sharp distinction between the nature of the linguistic system of sounds and the quite different realm of writing, of the ways in which a given linguistic system are conventionally spelled. Scribes, of course, were not writing distinctive features; they were using a strictly limited set of symbols. In the cases under discussion, they were forced to select a letter, the choice being restricted to ě or a in glagolitic, with the additional possibility of ja in cyrillic. The conventional choice was a, but if, exceptionally, ě was chosen, it made no significant difference: čaša is expected, but čěšě, čěša, or čašě would be unambiguous equivalents. I follow Trubetzkoy (who had accepted the wise teaching of Durnovo) in believing that this sort of spelling variation, extremely rare in OCS, is essentially without linguistic significance.

This poses the issue of interpretation. I believe that scribes were guided by two major considerations: the actual exemplar they were copying, and their internalized rules of what they believed to be correct usage. A skillful scribe could either reproduce exactly what he saw before him, or else he could make all the appropriate adaptations required by his own conventions. In fact, most scribes produced some sort of hybrid, along with random errors.

An alternate assumption is that within the finite alphabet available, scribes wrote "what they meant", that is, they had specific phonetic associations with each symbol, and they tried to use the symbols to reproduce the phonetics of their own pronunciation. On the basis of my experience in trying to teach the relation of sound and letter in the very different systems of English and Russian to students of many different backgrounds and linguistic ability, I find this assumption of dubious value. When a scribe "corrected" *trěva* to *trava* or vice versa, he obviously was guided by phonetic associations. But when one of the scribes of the Psalterium Sinaiticum wrote *žěby* or *čěša*, instead of standard *žaby* and *čaša*, I strongly doubt that it is anything more than a hint that he had difficulty with spelling rules.

The non-standard use of ѣ in the imperative покажѣте (Zogr Mar Sav) or the comparative suffix in мъножѣиш- (Mar Sav Euch), тачѣе (Zogr) or горьчѣе (Euch), on the other hand, very likely does show morphological innovation.

A second question has to do with assumptions about the history of OCS. If one believes that the system developed by Cyril and Methodius permitted only *ě* in position I or II or both, then the attested spelling systems can be interpreted either as showing specific kinds of innovation, or as representing a different dialect. It is my impression that Trubetzkoy saw Proto-OCS as a South Slavic dialect which had a front vowel after palatals; his Moravian OCS differed in having neutralization also after *c/ʒ,* but the distinction he makes between Moravian *ě* and *ä* is not at all clear to me. Another possible view is that the language of the Moravian mission adopted Czech features, or at least that manuscripts taken south and used as the ultimate models of the canonical OCS copies had adopted such spellings. If this is so, then the deviant spellings with *čě* for *ča* or with *cě* for *ca* can be seen as reflections of archaic spellings – but archaic from the point of view of the multi-regional standard written language, and not from the point of view of local South Slavic dialects. On the other hand, the dialects of Macedonia and Bulgaria began a varied series of local innovations which can be expressed in terms of modification of the rules of vowel-adjustment. The deviant spellings of OCS can be taken to reflect this sort of innovation. I incline strongly to this view.

In sum, I contend that Common Slavic had *ā* after *j and hushing obstruents but *ē opposed to *ā after all other consonants, including the *c/ʒ* which resulted from KAI (while after BdC *c/ʒ* only old *ā remained). This situation survived in most Slavic dialects, including those underlying our canonical OCS manuscripts. In the Czech region – within frontiers that cannot reliably be reconstructed – the situation began to change, possibly as early as 850, but perhaps somewhat later. The spelling of the Kiev Sacramentarium reflects this local system.

In the period of rapid dialect change after 850 somewhat different innovations arose in local South Slavic dialects, and after about 1100 such changes became more common.

Further variants on the specifications of the rule or rules of vowel adjustment led to manifold changes of different kinds in different environments, e.g. $e > o$ in North Slavic. This sort of problem, of course, lies far beyond the time–frame of the present study.

NOTES

1. The functional opposition of the two series *p *š etc. vs. *b *ž etc. is certain; the exact phonetic nature is a matter for speculation. Phoneticians and linguists concerned with the theory of distinctive features have recently called into question the appropriateness of the usual terms *voiceless* vs. *voiced* and/or *tense* vs. *lax*. The dispute has no bearing on the matters discussed in this essay, however, and the familiar terms *voiceless* and *voiced* will be used.

2. The most natural progression surely is for *k̂/*ĝ to become either hissing *c/*ʒ > s/z (for Slavic) or else hushing *č/* > š/ž (for Baltic, whereby Latvian and Old Prussian presumably shifted *š/*ž to *s/*z later). For both systems, the phonologization of the voiced *z or *ž was an important factor in later developments.

3. By OCS here I mean the generally accepted forms as normalized on the basis of the canonical manuscripts (cf. Lunt 1974 [hereinafter *Gram.*] § 6 ff.). In theory this is a somewhat standardized and thus probably hybrid type of eastern South Slavic which reflects church usage at the turn of the 9th-10th c., in any case no earlier than 863 but possibly as late as 1025. It must be emphasized that all evidence points unambiguously to the period of about 850–1100 as one of rapid and profound change in the Slavic dialects of all areas. It is for this reason that careful labelling of data as OCS is imperative.

     My definition of the OCS canon is narrow, for I wish to attempt to keep different types of language separate until it is demonstrated that they indeed belong together. I therefore exclude the Undol'skij Fragments and the Enina Apostol, placing them in a special category of immediate post-OCS texts. I also exclude the texts of western origin which are used as sources for the Prague *Slovník jazyka staroslověnského* (Kurz et al.). Yet all these texts, along with a number of early East Slavic manuscripts which obviously are copies made by bookmen of Rus from original OCS manuscripts, can be used – with proper caution – for some matters, particularly lexicon. Thus I will include evidence from the Izbornik of 1073, the Archangel Gospel of 1093, the 12th–century Lěstvica (The Ladder of Divine Ascent by John Climacus), and the Hamartolos Chronicle (Chronicle of George the Monk, preserved only in East Slavic copies and therefore modified in ways that require special caution in assessing the data), and also the Hexameron of John the Exarch of Bulgaria (known from a Serbian copy of 1263 and a series of Bulgarian and East Slavic copies). On the whole, the material I cite that is not canonical OCS is to be found in Sreznevskij (and often Vaillant) or the standard editions. If at all possible, I have verified the citations from facsimiles or microfilms of the originals.

     Unfortunately, many linguists lack philological training. The most common source of error is the blind acceptance of any item in Miklosich's *Lexicon palaeoslovenico-graeco-latinum* (1862–65) as "OCS", although most of his data is from non–OCS mss.,

much of it being as late as the 16th–17th c. and to be characterized as Slavonic, with further regional (Serbian, Bulgarian, Rusian, etc.) qualifications. Moreover, his information had to be culled in large part from impressionistic and often seriously faulty reports by others, and not from the original mss. Unreliable data from Miklosich and other sources have travelled from monograph to handbook to article to monograph to handbooks like that of Shevelov (1965) for more than a century. Itis time to be more careful. In this regard, the work of André Vaillant is exemplary in his *Manuel du vieux slave,* though occasionally in his *Grammaire Comparée* he is not fully precise, and seems to attribute to OCS forms that do not belong there.

4. I regard *v* as an underlying glide /w/, *Gram.* 148, note 4.

5. Many problems are being brushed aside here. Let me mention that for the hypothetical Cyrillo–Methodian dialect of the 860's we cannot guarantee that the symbols "c̄"/"ʒ̄" (ц/з) represented apical hissing affricates; they might just possibly have been simply palatal *k̂*/ *ĝ*, dorsally articulated with little or no off–glide or affrication. The "č" (ч) more certainly stands for a hushing affricate. The phonetic realization of *tj/*dj* (and *stj/*zdj)* surely varied widely even within the Bulgarian lands, but the details have been concealed by conventional spelling (with the sole exception of the *žǯ* revealed for *dj* in *velьbǭždži, Gram.* 38.) The reflexes of *tj/*dj,* however, concern developments of the last phase of Common Slavic and are of no direct concern to this paper. – The fact that the voiceless *č* and *x* have no corresponding voiced partners is striking. Henning Andersen attempted a partial explanation by his hypothesis of the lenition of *g* and its several palatalized derivatives. His observations are valuable, but his data are too selective and his conclusions flow chiefly from a number of assumptions that are not well founded, including crucial reliance on the older Jakobson–Halle system of distinctive features. However, investigators into Slavic linguistic prehistory should be alert to the possibility that voiced obstruents (especially palatals) may often fail to act in a fashion that is fully parallel with the voiceless consonants.

6. Although the conditions can be stated in the same broad formula –– velar changes if before a non–consonantal non–back segment –– in fact no *j* or front vowel remains after the action of KI except for the **e* or **ī* from **ai* (< IE **oi* or **ai),* or else a vowel in newly-borrowed words, e.g. *ocьtь* 'vinegar', ultimately from Latin *acētum* but with unexpectedly shortened second vowel (cf. Vasmer s.v. *ócet).*

7. Note that this formula, unlike that in most discussions (cf. note 10, below), makes no mention of *x.* The verbal *–smisaj+* and the pronoun *vьsь* 'all' will be discussed in detail toward the end of this study.

8. Up to this time, KI was universally called the First Palatalization, but disputes raged as to whether KAI or BdC came next. Therefore, the terms "Second" and "Third Palatalization" vary in meaning, and their use is a source of confusion. Vaillant (1950 52ff.) simply regards BdC and KAI as two aspects of a single process he calls the Second Palatalization. Nahtigal wisely opposed the (single) Progressive Palatalization, i.e. BdC, to the First Regressive Palatalization (KI) and the Second Regressive Palatalization (KAI), but few scholars have followed this sensible distinction consistently.

9. The only other attempt to uphold the priority of BdC that has come to my attention is Jacobsson 1973. Yet while I agree with many of his arguments against traditional dating, I cannot accept his proposed etymologies and derivations. See notes 24 and 45 below.

10. A major, but usually unformulated, reason for lumping BdC with KAI was that the results were the same, and could be expressed in the same complex formula of correspon-

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dence: $k/g > c/\mathfrak{z}$ (z) while $x > \check{s}$ in West Slavic (with some complications) but s in East and South Slavic. The difference in environments for the change, and the many exceptional cases for BdC were to be explained on grounds that the change was very late and was interrupted. Yet it is well known that a single phonetic process can be repeated at different stages of a language. A salient example is $tj/dj > \acute{c}/\acute{g}$ in SC. The formula $*sv\check{e}t\text{-}j\text{-}a$ appears as $sv\acute{e}\acute{c}a)$. Even more recently, short $*\check{e}$ in certain štokavski dialects yielded $je\text{:}$ $*t\check{e}\text{-}rati$ is usually $tjerati$, but in some dialects it has become $\acute{k}erati/\acute{c}erati$. In parallel fashion, $me\acute{d}a$, $\acute{d}avo$ and $\acute{d}evojka$ go back to $*med\text{-}j\text{-}a$, $djavol$ and $djevojka$ (cf. OCS $me\check{z}da$, $d_bja\text{-}vol_b$, $d\check{e}va)$. For secondary palatalization of k to $\check{c}$ in northern Slovenian (e.g. $m\partial\check{c}\partial k <$ $*mek\check{e}k < *m\varrho k_bk_b$ 'soft'), see Ramovš 1924 243ff.

11. The literature on the subject is vast. Channon and Jeżowa (1968: she believes with Stieber and Shevelov in the order KI, KAI, BdC) give competent and informative surveys of the scholarship, with slightly differing biases, and the principal literature. I will not attempt here to list more recent works that provide no new evidence or points of view. My aim is to deal with the data and issues which are pertinent and to show why a number of issues and a great deal of data is not of interest for these problems.

12. This view has grown from a feeling that the blend of Praguian and neo–Bloomfieldian practice of the 1950's (embodied, for example in my 1954 OCS description or Halle's 1958 *Sound Pattern of Russian)* was inadequate. Generative phonology was developed precisely through efforts to account more satisfactorily for the complexities of the morphophonemic systems of Slavic and Semitic, and it has proved valuable in dealing with totally different systems such as Wichita (cf. Rood, in *Language* 51 (1975)). Some practitioners of generative phonology operate at a level of abstraction that has caused widespread reaction in the name of naturalness, but many of the protesters base would-be theories on a handful of anecdotal illustrations from poorly described languages which do not seem to be known to the theorists. Others, operating with a language they know, but one that is relatively simple in morphology and morphophonemics, find no need for certain hypotheses and procedures and mistakenly conclude that grammatical theory must exclude them. Some of the newly proposed constraints (e.g. against ordering rules) are on the whole to be rejected, for they simply move us back to positions we found unsatisfactory before 1960. They make grammar more a lengthy enumeration of items and less a system of processes. I choose rather to explore the hypothesis that processes eliminate the need to list many items, and the hypothesis that inclusion of certain abstract underlying elements makes it possible to simplify a given system in plausible ways. For example, the fact that surface iod never occurs in post-consonantal position is insufficient reason to exclude $-j-$ from underlying forms, since to posit it both in underlying representations (e.g. $pil\check{a}t\text{-}j\text{-}\check{a} > pila\check{s}ta$ 'Pilate's (wife)') and as an intermediate stage of derivation (e.g. $au\text{-}krat\text{-}i+y\check{s}\text{-}amy > -krat\text{-}j\text{-}ys\text{-} > ukro\check{s}t_b\check{s}em_b$ 'having tamed (D pl m)' makes a whole series of elements of the system perspicuous.

13. The descriptive problem, of course, is to decide what is excessive. I find Trubetzkoy's morphophonemics of Russian is at the same too concrete and too abstract; Halle's (1958) is too concrete, but Lightner's *(Problems in the Theory of Phonology,* 1974) far too abstract. Chao's famous demonstration that more than one phonemic description can be adequate holds true also for descriptions based on theories of generative phonology. What is important is that the analyst must know the material and the way it actually occurs in the language, and must account for it fully.

14. A small residue remains in the form of special diacritics on certain verbal roots to asure that they replace k/g by $\acute{k}/\acute{g}$ before the derivational suffix $-\check{a}-$ or $-\check{a}j-$; this alternation is variable according to dialect and in any case involves at most a minor rule or two.

As an example: instead of a single underlying stem for 'father' /atik-/ which produces N sg *otьcь*, V sg *otьče*, poss. adj. *otьčь* m., *otьča* f., by phonological rules that are not morphologically constrained (as I attempted to establish in my Epilogue, see *Gram.*), I now posit the stem /atik̄-/ (though /atić-/ could also be used): the selection of the "hard" vocative desinence /-e/ and not the "soft" desinence / -u/ for k/ġ-stems must be specifically stated (as in *Gram.* 47), and the mutation of *k̄/ġ* to *č/ʒ > ž)* must be specified. A blanket rule that velars and *k̄/ġ* mutate to *č/ʒ* in stem–derivation and in verbal morphology before front-vowel or iod suffixes must be made, with exceptions that provide for *k̄/ġ* in underlying representations of "iteratives" like na–*ric–aj+* 'name' (from /rek+/) and *dviʒ–aj+* 'raise' (from /dvīg+/).

15. Historically, for reasons to be discussed below, I estimate that *k̄* and *ġ* were added to the inventory fairly early, while *š, ž* and *č* came in later (though a phonetic *š* was probably one variant of **X)*.

!6. This productivity can be assumed only under a theory allowing underlying /ai/ with a morphologically conditioned development to –*i* (e.g. in N pl m *gradi* 'cities' and *otroci* 'servants' from/grād-/, /atrak-/); and imper. *nesi, moʒi* from /nes+/ 'carry', /mog+/ 'be able'), and the unconstrained "otherwise" development to –*ě*. Further, the theory must allow for exclusion of recent loans of specific shapes – here those with velar before front vowel – from the core phonology. Such marking on words like *kitъ* 'whale' and *geonьskъ*, adj. from *geona/geena* 'hell, Gehenna' is, in my view, plausible as long as we are dealing with the hypothetical language of the first translators.

The period between 863 and about 1100, during which our OCS mss. were written and copied, surely encompassed fundamental changes in the underlying phonological structure. Two stages must be assumed for *c/ʒ*, which very likely was still phonetic *č/ʒ* in early OCS and in some later dialects. Unfortunately, the spelling systems give little indication of the phonetic quality. For early OCS, *č/ʒ* will be generated normally in roots (e.g. *kainā, akit– > čěna* 'price', *ocьt–ъ* 'vinegar'), while new loans (like/kīt-/) will be marked to block KAI. For the end of the OCS period, toward 1100, however, sequences-like /kī/ surely should be admitted without special qualifications in the underlying representation of root morphemes. Now *č* and *ʒ* are to be posited in the underlying forms directly or as *k̄* and *ġ* (/kěnā/, /akity/, but /kīty/), and KAI has been narrowed to a morphological context, triggered by the diacritically marked *ě* and *ī* of imperative or declensional desinences. See also note 63.

This is an area in which it is impossible to insist that the rules must be followed rigorously, since it is quite possible that a few stems will behave idiosyncratically. The example of Cypriot Greek is possibly instructive. Newton 1972a (esp.21) reports that though *č* ordinarily is expected before front-vowels (with the salient exception that the *k* of verb-stems alternates with *k̄* before front-vowel personal endings), a few words must be considered to have underlying *k̄*. It is noteworthy that the expected local form of *kirios* 'lord' has taken on the meaning 'father' (in the shape *čiris*), while a more recently imported shape *k̄irios* means 'Mr.'. Borrowings from closely related dialects are surely a major source for sporadic anomalies in any system.

17. Quite unrealistic vowel systems are assumed by most pre-structuralist investigators, who posit several varieties of *o* and *u*. As recently as 1965, Shevelov was operating with several series of changes crucially involving delabialization of vowels; many problems disappear if no distinctive labial quality is assumed in the first place. [Readers of Shevelov's tome may be misled into thinking that he is a structuralist; in fact he throws together, incoherently and unsystematically, heterogeneous assumptions and conclusions from sources whose reliability and consistency he has not assessed carefully. The book should be consulted only with utmost caution, cf. Lightner 1966, Lunt 1968, Van Campen 1966.] Rounding was not distinctive from the beginning of Slavic (as opposed

to Baltic where some contrast between *ā and *ō was retained), as Mareš 13 recognized, down to the emergence of a new *ū < *au, probably not long before our texts begin. We must, of course, assume that nondistinctive rounding was assigned by rules, different at different times, to *ỹ, *a, *āN and especially *au under statable conditions. Notice that I write *au/*eu (rather than the *aw/*ew of Gram., or the *ay/*ey consistent with this basically four-vowel system) as a reminder of traditional IE relationships and the attested monophthongal u (< *au/*eu), which surely was distinctively rounded.

18. However, lьgota 'freedom, ease' (not canonical OCS but from the Izbornik of 1073) violates the rule; it must be interpreted as a new post-BdC formation (so Vaillant 1950 54).

19. Shevelov 348–9 even posits *atiku and *atikū (I am simplifying his needlessly cumbersome symbols for the low vowels) and then must have recourse to substitutions that are "purely morphological".

20. In OCS, -e has generally been replaced in the soft paradigm (historically *yo-stems) by *-au from the obsolescent u-stem paradigm; for fluctuations in OCS usage, particularly with borrowed stems, cf. Vaillant 1964 98. Vaillant missed one significant deviant form: knęzu 'o prince!' (Supr 156.8) beside expected knęže (for kъnęže) in the same dialogue (Supr 155.18). This shows selection of the "soft" desinence; other OCS evidence shows rather that ʒ-stems are becoming "hard", cf. Mar A pl pěnęʒy (Zogr Assem –zę). Such divergent dialectal developments are to be expected, but the increasingly set form of the written language, and the fact that we have inherited only traditional religious texts, has deprived us of most of the evidence.

21. So firmly ensconced in tradition is the order (1) KI, (2) BdC that Mareš, otherwise very much the iconoclast, states (57) that this order "is confirmed by the forms otьče (Voc.)... as compared with otьcь". There is no confirmation, since the conditions are mutually exclusive: *atike but *atikaS. Yet others share the prejudice that a modified k in the vocative *atike would somehow be immune to further change. Birnbaum, trying to envision the possibility that BdC preceded KI, opines that a vocative "*otьce" would arise but, "being phonologically acceptable, [it] would need no further modification" (107). The error is easy to spot. Birnbaum is confusing two systems: (1) the observable OCS surface forms (which provide his criteria for acceptability), and (2) the system(s) underlying – generatively or historically – the observable forms. But how did the OCS sequence ce arise? Must the formula be "k > c(c')", as Birnbaum postulates? How did the system look before any postulated change? How did it look after each change?

22. This display is slightly more historically oriented than the table of desinences offered in my Epilogue (Gram. 205). I write S (not –x) in order to show the IE relationships more clearly. For a generative description I found no positive reason to distinguish between historical *ām and *om, and therefore wrote *-an. (This reflects my belief that the old length distinctions in this position had historically been lost by late Common Slavic.) Here I assume the distinction to be relevant for the stage when BdC began and I posit *-āN vs. *-aN. Since the loss of distinction between final *m and *n is irrelevant for this discussion, I use the cover-symbol N.
　　Since I now believe that BdC, Vowel-raising, and the loss of *S involve too complex a series of rules for OCS, I regard the array of desinences in the Epilogue to represent a stage for some sort of middle Common Slavic. Therefore for OCS I must require alternate desinences, whereby the first is selected by "hard" stems, and the second by "soft". the N pl m –i requires a diacritical mark which blocks č-palatalization, and it will thus, being a front vowel, trigger ć-palatalization.

	SINGULAR		DUAL			PLURAL			
	masc neut	feminine	masc	neut	fem	masc	neut	fem	
N	y/i a/e	ā	ā	ai/ei		i*	ā	yN/iN	N
A		āN				yN/iN			A
G	ā	yN/iN	au/eu			y/i			G
L	ai/ei	ai/ei				aixy/eixy	āxy		L
D	au/eu		amā/emā		āmā	amy/emy	āmy		D
I	ami/emi	ajāN/ejāN				ȳ/ī	āmī		I

23. Let me emphasize that any conclusion in this realm must be speculative, though I believe that my hypothesis is realistic and quite in accord with the total available evidence. However, we must recognize clearly that the evidence is not without ambiguity and that some circularity in assumptions and conclusions is almost inevitable. Failure to recognize these unpleasant facts vitiates much of the work on this problem (and most other major problems in the prehistory of Slavic). For example, Wukasch's ingenious discussion of rule ordering is completely vitiated by his failure to recognize that the "historical order" of changes he starts with is purely a construct of Shevelov's reasoning (which I consider blatantly faulty as well as internally inconsistent), and therefore the proposed "reorderings" – Wukash's own contructs – can make no contribution to linguistic theory. Birnbaum's verbose discussion (1970 103 ff.) does not live up to its ambitious title, for he too starts with Shevelov's conclusions and thus his praiseworthy effort to set up explicit alternate hypotheses and test them is doomed from the start.

24. Jacobsson rejects these standard etymologies, for he contends that BdC in nominal forms is caused exclusively by syllabic *n. He justifies *avpkã (for ovьca) by an analogy with ovьnъ 'ram', which he derives from *au-p-as (56, fn.); it is unclear whether these two hypothetical forms are supposed to be from a single period (why av vs. au?). Vainikas is declared to contain a suffix unrelated to that in *vain-pkas (57) which underlies věnьcь. Jacobsson does not explain how his putative *p yields OCS ь rather than the ę which is expected in terms of the processes most other scholars assume.

  Vaillant 1974 299 considers vainikas too beautiful a correspondence with věnьcь to be anything but a borrowing or adaptation from Slavic. This in no way detracts from the assumption that both Lith. –ik–as and Slavic –ьc–ь go back to very ancient *ik–as.

25. These two suffixes serve to form diminutives as well: ryba 'fish' rybica, kovъčegъ 'chest' kovъčežьcь 'small box'.

26. Krьmljenikъ 'ward, one who has been nourished' occurs, but no feminine is attested.

27. I believe that this is what Shevelov is saying, 344 f. Jeżowa 1968 193 is rather clearer.

28. Finnish adopted niekka as an independent word 'one who knows something, is able to do something'. Mikkola 1938 33–4.

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29. The feminine –*niece*, representing *–neik* + *j–ā*, is not exactly parallel either to the masculine or to the Slavic feminine. Nor is it clear what the origins of *–neik–* could be. Such forms, however (along with Lith. words where *k*–suffixes have *yo–* or *yā*–stem declension), caused Brugmann and others, especially Ekblom, to hypothesize that BdC actually was triggered by the presence of a *j*. This theory is quite untenable and has been thoroughly discredited. Channon and Jeżowa 1968 review the objections in sufficient detail.

30. SC *dažd* 'rain' requires prehistoric *dyzdj–aS* By Meillet's suggestion the dimin. would be *dyzdj–ik–aS* > *dyzdīkaS*, then OCS and archaic SC "dъždicь" beside *dъždь* or *dъžžь*. The basic noun form, however, was taken along with the special suffix –*ic–*: *daždic*. Similarly SC *koš* 'basket' (> *kas–j–aS) košic*. In SC these diminutives are generally replaced by forms in –*ić*. The long–continued productivity of the formation is shown by *kraljic* (now *kraljić*), from *kralj* 'king', a borrowing based on the name Karl that can be no earlier than 825 and was very likely after 900 (Lunt 1966). The Apl *nožicě* (? 'scalpels' – the translator misunderstood the Gk) of Ham (Srez. has var. –*ci*) implies *nožicь* for OCS, but this is the same pattern (cf. poorly attested dialect SC *nožic*): *nazj–ik*>"nazīk–", then reformed to *nož+ic–*. We can assume that –*icь* was replaced in East Slavic by –*ik–*: *nožik* 'machairion' occurs in the mid–12th–c. Vygoleksa Sb.

Not connected with this old formation are Sreznevskij's N pl forms *agnici* 'lambs' and *mьrtvici* 'dead men' for expected –*ьci*. The manuscripts were written after the fall of the phonetic jers. If these are not scribal errors (anticipation of the letter of the following syllable), they represent the svarabhakti vowel common in such clusters in East Slavic; [–tvc–] and [–gnc–] do not occur, despite the current R. spelling *agnci*, an emphatically non–colloquial word.

The *gvozdicь* 'nail' cited by Shevelov 342 (presumably from Miklosich) represents *gvozdьj–ьc–ь*, which would be normally spelled *gvozdiicь*, but of course was subject to contraction. *Kamenicь* 'stone' (also Miklosich) does not fit the *–j–ik–* pattern and without knowledge of the manuscript and the context I will not attempt to discuss it further. Pol. dial. *palic* 'finger' (Shevelov) does not fit the pattern, and one must have more information about the systems in which it occurs. Ukr. *Hryc*, hypochoristic for *Hryhoryj*, has no possible connection with a palatalization process that took place before 950.

31. This first example of *starik*, in a Pskov legal document datable only within the limits 1398–1476, apparently has the technical meaning 'old inhabitant, long–time resident'; as a replacement for *starec*, *starik* is first attested in 1525. The earliest clearly diminutive example of –*ik* is *nožik*, cf. previous note.

32. The adjective *Rusian* is used to refer to the territory of old Rus and its culture in the early period, up to about 1400. It replaces the traditional but wholly misleading term "Old Russian".

33. The Prague *Slovník* lists *zlatikъ* with two citations from 1489 (other copies of the same text having *zlatnik–*), and it is found in a 16th–c. ms. in Deuteronomy 1:1 for 'καταχρυσεα', a rendering of the place–name Dizahab, elsewhere again *zlatьnikъ*. This evidence is too weak to posit the –*ik–ъ* for OCS.

34. Some investigators ignore the clearly secondary and late origin of *lik* and adduce *lice* and *lik* as evidence of the haphazard operation of BdC (e.g. Shevelov 339, 344). Further, the root is alleged to be *leik–*, which would mean that *k* became *c* even in the presence of a diphthong. This old etymology (cf. Vasmer s.v. *lik* II) juxtaposes the putative neuter *leik–a* to a hypothetical feminine *n*-stem *lik–nō* (OIrish *lecco* 'cheek, jaw') and *loik–* (OPrussian *laygnam* 'Wange', a "misspelling" of *laycnan)*, to produce a hypothetically exemplary ablaut series. Unfortunately this ideal set is illusory: the Irish etymon was pro-

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posed specifically to bolster a rule "*kn* > *kk*" that was subsequently rejected by Celtic specialists (cf. Thurneysen, Grammar of Old Irish, § 150); the OPrussian spelling was emended to fit the putative pre–Irish form; and finally, the Slavic pre-form was decreed to have the required shape **leik–*. The weakness of this series of conjectures is surely why Meillet 1934 92 posited **ī* for *lice* and considered the etymology unknown.

35. As for OCS *likъ* 'chorus, assembly', it was surely a new borrowing; its distribution in more modern languages can be accounted for by the church influence on local dialects, cf. Vasmer s.v. *lik* I.

36. **Trizъ* occurs thrice in Genesis 15:9, which unfortunately is not attested in OCS. In the only accessible texts whose orthography distinguishes ҙ from *z*, the Bulgarian Grigorovič Parimejnik (ca. 1200), we find 'z'. The word has not survived into any modern language. What is surprising is that Vasmer, whose philological decisions are usually judicious, has the entry *trizъ,* for that spelling, in a 15th-c. ms., contradicts the two other forms in the same sentence as well as all other examples. Vaillant is undaunted by his correct philology and simply decrees "passage de *–dzĭ à –zŭ*" without discussion (1958 673).

37. Jochem Schindler tells me that the Hittite cited by Vaillant (1958 674) surely does not belong here at all. Nor is there any guarantee that the Greek and Germanic words usually cited are indeed the same formation (e.g. Eng. *twig*, Ger. *Zweig* could have a **-ko-)*. In general, derivations from numerals denoting various kinds of series are often hard to etymologize.

38. **Dvizъ* is plausible as OCS on the basis of SC *dvizak* 'two-year-old ram', *dvize* 'two-year-old lamb' (n., < **dviz-ęt-)*, etc., although they are not attested before the 16th c., and no similar forms occur in East or West Slavic. Mac. and Bg. dialects have ҙ*vize* and the like; such dialects apparently have no initial group *dviz–*.
    The verbal stem *dvig–* 'lift' (which apparently has lost the alternant shape *dviž–* throughout Macedonia) often appears as *diga;* in the southeastern village of Visoko the form is ҙ*iga.*
    Secondary ҙ replacing **z* is common in Macedonia, particularly in the west. It is fairly general in initial position before *v*, and examples of ҙ*von* 'bell, sound of bell' (and related words) occur in the immediate post–OCS period, while ҙ*ver* 'beast' is attested somewhat later. (Indeed, it is possible to consider that OCS ҙ*vězda* 'star' is a dialectal innovation beside *zvězda;* the etymology is obscure, and a Common Slavic doublet **gvězda/ *zvězda* suffices to explain all the extant variation. This is a case where attested OCS perhaps does *not* give us reliable evidence of a form that can be attributed to other dialects of the 9th c.) Initial ҙ for etymological **z* before vowel is common in the verbal stem *zid–* (OCS *zьdati ziždetъ),* e.g. ҙ*ida* 'build' and old *zьr-/zir–* 'see', e.g. ҙ*irka* 'peep'. In the Gostivar region, *noҙri* appears beside *nozdri* 'nostrils'. The development of secondary ҙ (and ҙ̆) in Macedonian appears to be erratic; perhaps more detailed studies will reveal more systematic characteristics. See also note 120.

39. Schindler kindly pointed out to me that in many regions German underlying /ai/ is realized with a distinctly lowered second element.

40. In terms of descriptive generative phonology, we may suppose that /ai/ continued as the underlying form while the phonetic realization could be [aę]; BdC as a productive process would be effected by a pronunciation rule applying after this modification.

41. Vaillant (1950 118) has the same idea; both posited metathesis of **ai* as well. Shevelov follows along but with dubious explanations, 285 f. Accepting Vaillant's notation, this would mean DL **reakea* and require BdC and KAI to be essentially simultaneous, a conclusion that I find raises more problems than it solves. Old **ai* after the results of BdC

yields OCS *i*, a process neatly accounted for by fronting: DL **awikai* > **-kai* > **-kei* > **-ki* > *ovьci*. If metathesis preceded BdC, the relationship would be one of raising, **ea* > **ie*, with unclear motivation. Thus the attested *-i* would have to be attributed to analogy with *j*-stems; surely this is a needless assumption.

Assuming phonetic **aę* > **eę*, we can still hypothesize that this represented underlying /ai/ replaced by /ei/.

42. Since the only Slavic prefix ending in *i* is *pri-*, which the Baltic equivalents demonstrate to represent older **prei-*, BdC is excluded for root-initial *k/g*. Thus stems like *prikosnǫ+* and *prikasaj+* 'touch' do not constitute exceptions to BdC.

43. Jeżowa 1975 focusses only on *-ika* and *-ica*, Vendina on the competition of these two plus *-iga*. Neither pays attention to the question of the place of the terms within the botanical nomenclature of the various dialects involved. Vendina and Bielfeldt provide bibliography not mentioned by Jeżowa.

44. The newest Slavic etymological dictionary, Trubačev et al., in attempting to deal with full words and not merely roots, admits many items that are quite dubious for the Common Slavic period. Among them is **brusьnica;* R. *-ika* is called "innovating as to the consonantism of the suffix". However, the widespread attestation in modern times can be ascribed precisely to the market value of these berries, so aptly emphasized by Peters, whose fascinating monograph beautifully illustrates the complications that can arise with such words. German dialects borrowed slightly different Slavic forms of the name for whortleberry and proceeded to elaborate many phonetic variants whose forms were influenced in astonishingly complex ways. Bielfeldt fills in the background with Slavic variants, disposing of all objections to the Slavic origin of *Preissel (-beere)* < **brusьlica/*brusьnica*. Still, this borowing does not get us back earlier than the 13th c., nor does it specify the Slavic suffix.

45. This is compatible with Trubačev's wording, quoted in note 44. Jacobsson 61 firmly puts the variation into the earliest period, setting up **-ιņkā (> -ica)* and "**- ie/īkā*"(one suffix or two?) to yield *-ika*.

46. Trubetzkoy belived that the glagolitic alphabet was rigorously phonemic and, because it lacks a letter for iod, demonstrates no *j*-phoneme for OCS. Mareš bases many of his explanations on this same hypothesis. I have found it impossible to operate realistically with a description of any kind of Slavic devoid of a phonemic *j;* I am willing to agree, however, that the surface signals for underlying iod may have been chiefly contained in special nuances of the vowels. What is important is that I cannot believe that Cyril and Methodius constructed a truly ideal alphabet, though it was very good. In fact, I submit, all investigators operate – tacitly or not – with **j* for all stages of Slavic.

47. The source is clearly Lat. *Graecus,* but *ь* demonstrates an intermediary with a short vowel, so *grьk-* underlies all South and East Slavic forms. Old Czech *hřěk,* however, shows the expected original long vowel and may represent an independent borrowing (cf. *cěsařь* among Catholic Slavs but *cьsařь* > *carь* among the Orthodox, again with *ь* in place of an expected long vowel); however, it might well be due to later Latin and German learned influence. Pol. *grek* is a late borrowing from Latin. (Shevelov 351 is curiously confused about this word, holding that R, Ukr., and Cz. require old **grek-*. But *grьkъ* is nicely attested in OR and could yield only *grek*. The levelling out of the expected Ukr. alternation *hrek-/*hryk-* (supported by the non-alternating *e* in *hrec'k-* < *grьčьsk-)* is banal. It is odd that Shevelov missed original *ě* in Czech.)

48. See Vasmer, s.v. *glěk* II. *Gъlькъ* occurs in the Mstislav Gospel of 1117, in a passage that has been notably revised from the usual text (Mk 7:4), where the corresponding word is *stьkljanica*. It very likely represents a Rusian substitution in the Hamartolos Chronicle as well. Otherwise, it occurs in texts of Rusian origin. It is further odd that instead of expected "golek, gol'ka" R has *glěk glěka* (with many derivatives, cf. Filin) and Ukr. *hlek hlèka.*

49. Recently published reverse dictionaries have made it less difficult to check such matters fairly accurately. The Sadnik–Aitzetmüller OCS glossary contains such a list for the canonical texts. Sreznevskij has been efficiently handled by the Obrębska–JabWońska group, whose listings often lead one to items buried under unexpected alternate spellings. Aitzetmüller's final volume in his massive edition of the early 10th-c. encyclopedic Hexameron by John the Exarch includes a clumsy Wortstellenverzeichnis, but also a reverse list. As before, Aitzetmüller has stubbornly refused to follow Vaillant's identification of traditional ghost-forms created by Miklosich, Sreznevskij and others (cf. *Gram.* § 15.772 and p. 189 n 73), and he perpetuates the ghost-life of "iznicati, pritucati/pritycati" instead of giving the presents *izniče-, prituče-/prityče-* with the note that no inf./aor. forms occur. Still, his work enables one quickly to see that certain formations are not attested, and to find – with some labor – the exact location of those that do.

Caution is called for at every step: lexicographers' lemmata are not hard data. Another example: Sreznevskij lists *pastušьkъ* (a dim. of *pastuxъ* 'shepherd'), but the occurring form is N pl *pastušьci*, which is almost certainly from N sg. *pastušьcь.*

Words like *skačьkъ* 'grasshopper' or *smyčьkъ* 'player of stringed instrument' date from well after 1250, as do all forms in -*ьko.* There is no reason to attribute them even to the 12th c., and thus they are not pertinent in a discussion of BdC even if one believes BdC was still operative in the 9th or 10th c. They illustrate the East Slavic tendency to use *k*-suffixes (/ьk/ as well as /ьk/) for older *c*-suffixes. Thus *věnьcь* is in part replaced by *venók* (G *venká*). Here probably belongs the isolated Rjazan' dialect form *otёk* for *otéc* 'father' (a word surely maintained by virtue of the church language); cf. *zjatёk,* dim. of *zjat'* 'son-in-law'. *Otёk* unfortunately is known only from a list that gives no morphological data or sphere of use (Budde, *Russkij filolog. vestnik* 38, 1892, 60). The *otik* 'male (of an animal)' cited by Shevelov 346 simply as from the R dialect of the Komi Republic tells us nothing: it seems to be the "suffixoid" -*(e)c* replaced by the suffix -*ik* – but how does this work in the given system? (These particular dialects are subject to considerable interference from Komi (Zyrian).) Such forms are innovations, not archaisms.

50. Etymological connections are obscure, and the formula *pykt-yk-ā* is also possible, for *kt* somewhat mysteriously, behaves just like *tj* and would thus effect Fronting. The same source surely, despite Vasmer, underlies both R *počka* I ' kidney' and II 'bud, gemma'.

51. Cf. Berneker. Vaillant's suggested connection with the usual word for bear, *medvědь* (itself a tabu with the transparent meaning 'honey-eater') is formally inexplicable. This is not the same as – and in any case there are no early parallels for – the trucated hypochoristics such as Cz. *Stach* for *Stanislav* or *brach* for *brat* 'brother'.

52. This implies *ь/ъ* as underlying phonemes; more traditional analysts write -# *k*-# *k*- and specify some device to accomplish the substitution of *č* for first underlying *k*. For discussion and literature, see Thelin.

53. Shevelov's account of this problem (341) is too confused to deal with here, but his conclusion that forms of the type *velar* + *ьk* must be of later date than BdC is correct: he overlooked *knižьky,* which pushes the absolute date for innovation back into the 11th c. at the latest. – Kiparsky's discussion (1975 228-9) starts with the historical period, but he too missed the examples from the 11th c. Three stages should be distinguished: (1) *k* added to the characteristic vowel of *i*-stems and *u*-stems, *-i-k-* and *-u-k-*, early contrasted phonetically as *-i̯-k-* and *-u-k-*; (2) reanalysis as *ik-* versus *uk-* (no longer necessarily tied to the *i*- or *u*-stem declension of the base), with *ik-* as an automatic variant after *i̯* – this stage continued to earliest OCS -*ьc*- vs. *ьk*-; (3) -*ьc*- versus -*ьk*- plus a dissimilative rule whereby -*ьk*- must be used after velar or palatal. This last stage is probably late OCS

and characterizes the period of weakening and loss of phonetic jers. Further changes in distribution in individual dialects contrast morphophonemic *-(ь)c- to *-(ъ/ь)k- in ways that vary considerably.

54. The connection of R *obža* and *obga* 'shaft on plough' with Cz. dial. *obza* 'hide from near tail', and Pol. *obza* or *obdza* 'tether' is much too dubious to establish an ancient *abi-gā*, and none of the etymologies are plausible. See Ž. Ž. Varbot, in *Balto-Slavjanskie issledovanija* (ed. T. M. Sadnik, Moscow 1974), pp. 42-48.

55. For a very full account, see Sławski, s.v. *księga*.

56. *Prisęga* 'oath' is a post-verbal containing the root *-seng-*. It thus is not an exception to BdC.

57. Greek γαρδίκι, plausibly datable to the 8th or possibly 7th c., shows *gard-ik-i* (> OCS *gradьcь),* implying the old N sg desinence *-aS* raised and fronted, see below and note 87. The loss of the final obstruent, a necessary factor in the raising, must be subsequent to the raising, but again no dating is possible. Shevelov 227 believes that the late date of the loss "is directly corroborated by the treatment of Go[thic] loan words in Sl[avic]. E.g. Go *kuniŋyaz* [sic!] (or its Germ[anic] parallel) which survives in Li[th.] as *kùnigas* 'priest' and in Fi[nnish] as *kuningas* 'king', appears in Sl as (OCS) *kъnęzь.* Obviously, in Sl –s was lost after the borrowing had been made." This is a serious misunderstanding of how normal borrowing takes place in closely related IE laguages. What was borrowed into Baltic and Slavic was the stem *kuning-;* each dialect then added the desinence appropriate at the time. Lith. still adds –as, e.g. *radāras* 'radar'. Finnish, on the other hand, did take over the whole word, the Germanic desinence being perceived, and therefore treated, as part of the stem.

58. Raising may have happened at different times in different environments, with the nasal providing the first examples. OCS provides no evidence for the expected *-aN* (< IE *-om)* of m sg (and probably G pl); very likely raising to *-yN* and loss of *N* was very early. Raising before *-S* might have lagged behind considerably.

59. The N pl m –i of gradi and otroci and the sg –i of nesi and *moʒi* (cf. note 9 above) is traditionally associated with IE *-oi* plus some intonational factor. Inasmuch as intonation otherwise shows no influence on segmental phonetics in this early stage (as opposed for example, to Slovene at a much later stage), I suggest that a segment was present, and *-s* is not implausible (cf. note 4 on p. 17 above). In *Gram.* I posited a special fronting *aiS* to *eiS.* More in keeping with accepted views is that in *-aiS,* as in *-aS* and *-aNS,* there was raising: *-aiS* > *-yiS,* just as *-a(N)S* > *-y(N)S.* The new *yi,* quite isolated in the system, assimilated to *ii* = *ī,* just as *ei* > *ii* and *au* > *uu* and, very likely, *ae (< *ai)* > *ee.* For an alternative suggestion, see p.47.

60. Insisting on full parallelism, some scholars assume fronting of *ä to *ě and then very late reversion to *ä (e.g. Vaillant 1950 188). This is based on a few aberrant spellings in OCS mss. (particularly in the special Kiev Sacramentarium, which has a number of features peculiar to pre-Czech; even less persuasive are examples from the Psalterium Sinaiticum, written by several very careless scribes), plus the interplay between a, ä, and e after or between palatals (or palatalized consonats) in numerous later dialects. Here again, evidence from OCS and 11th-c. East Slavic mss. is primary; data from later sources is to be admitted only after careful sifting. While the underlying representation of ě/ä need specify only /–high/, one assumes that throughout the presumably long period of existence of this basic four-vowel system of Common Slavic there were superficial pronunciation rules which further defined e/a as /–low/ and ě/ä as /+low/. The adjustment rules then specify that after palatals /–low/ vowels must be front (i.e. ī i e), while /+low/ vowels must be

/ + back/, i.e. *å*. I have no phonetic explanation for the resistance of the long or tense low back vowel to the fronting influence, nor can I explain why that same environment excluded the long or tense low front vowel. However, I submit that these are the facts which linguistic theory must explain; no theory is ever so strong that we must tailor the facts to fit it, modish as that procedure has become. See pp.33-56.

It is worth noting that in word–initial position, iod–prothesis affected precisely the same vowels, *ĭ, *e* and *å*, though with the long (tense) open vowel there is dialect variation. Early pre–Bulgarian apparently maintained initial *å*, while *ĕ* took *j–* and the group shifted to *jä–: *ĕd–* 'eat' > jad–, but *ågn–* (OCS *agnę* and *jagnę* etc.). No fully satisfactory solution is possible because of confused spelling in OCS and other early mss. and because every one of the roots involved presents a minor or major etymological difficulty (back/front quality original? length? iod originally present?).

61. Here I am rejecting two hypotheses. The first is to be found in most handbooks (e.g. Leskien 51); it specifies a divergent development: *ons* by special rule > *uns* > *y, but *j–ons* is immune form the *o > u* shift and yields *jens* > *ję*. This requires the extra assumption that A sg f *dušǫ* and 1 sg pres. *mažǫ moljǫ* show special morphological replacement of *-ę (< *j–ä–ṃ)* by *-ǫ,* which represents the regular development of *-ä–m* after non–iod. Instead, I posit (in essential agreement with Van Wijk 78, and keeping his notation but omitting reference to length): *–j–ons > *juns > jins > *ję.* (Shevelov 334 seems to offer two solutions at once.) The second hypothesis is also common, but it is usually hidden in a passing reference not fully integrated into the discussion: that OCS originally had G "otьcě" (e. g. Shevelov 348); Van Wijk's condensed and philologically unjustified remark (69), "*otьc̆ä* (aksl. –цъ, später – ца)" seems to be the source of this notion. Mareš, by assuming that BdC *first* involved a fronting of the *å* to *å̈* and then a regressive palatalization of the consonant (e.g. *–ikä* and > *–ikä̈* > *–ikä̈)* automatically ends up with forms like "otьcě", and for N sg fem "grěšьnicě". This prediction makes it necessary to justify the fact that OCS and most early manuscripts from all areas (possibly excepting Czech; her perhaps the Kiev Sacramentarium, cf. Trubetzkoy 65 n. l) clearly distinguist *–ca* from *–cě.* I submit that it is far simpler to suppose that *ka* and *kai* did not fall together. Later dialect interaction between *a* and *ĕ* in various positions is another matter – or rather a series of other matters.

An example is the genitive отъцъ of the cave–church inscription near Krepča in eastern Bulgaria (cf. *Arxeologija* 19 (1977) 3.19–29, Sofia). Although it may possibly bear witness to a neutralization of *ĕ* and *a* after *c* and *з* in some local dialect of the 10th c., it is quite insufficient to establish such neutralization in the language of Cyril and Methodius or in the various localized norms of OCS represented by the canonical OCS manuscripts. I contend that post–BdC Slavic *ca/за* maintained the back–vowel quality as *ai* was developing into the front vowel *ĕ*, then *ĕ;* the evidence of canonical OSC orthography and also of most other early Slavic dialects in the southern and eastern Slavic regions affirms the contrast *ca* vs *cĕ,* as in *–ьnica* vs. *–ьnicĕ.*

62. In contrast, a form like *grěšьnici* is ambiguous: it could be N pl m *–ьnik + i* (< *–ineik–aiS)* subject to KAI, or DL sg f *–ьnic +* the "soft variant" of the desinence *ĕ/i* (< *inīk–ai* with BdC; adjustment, *a > *e* after *k; ei > i).

63. Generatively, I accept underlying /ai/ for the language of Cyril and Methodius and posit monophthongization (/ai/ > [ĕ]) as a synchronic rule, e.g. L sg /kain–ai/ and /atrak–ai/ > kĕnĕ, atrakĕ, and by KAI > cĕnĕ, otrocĕ. For the end of the OCS period, however, as I indicated in note 14 above, I would posit the underlying stem /ḱĕn–/ or /ćĕn–/ and a diacritically marked desinence /–ĕ*/, and rules ensuring that /atrak–/ + /–ĕ*/ would yield atraćĕ > otrocĕ.

It is worth noting that this stage, where the units involved are essentially the surface phonemes I advocate in the first part of *Gram.,* the *k g x* generally alternate with *č ž š*

before a front vowel of derivational suffix or inflectional desinence, *except that* the *ě* or *i* of imperative or declension are associated with *c ʒ s*. In other words, KI is to be expected when a front vowel follows a velar, *unless* KAI is called for by a small and specifically marked set of front vowels. (This is the most useful way of phrasing the matter informally for students learning the language and it is also a general statement of the relative tenacity of the two alternations in the history of many Slavic dialects.) However, both Bloomfieldian and generativist precepts for rule–formulation require one to define the limited class first and put the general "otherwise" statement last. Thus the description is now: (1) *k g x* > *c ʒ s* before *ě* or *i* of imperative or declension; (2) *k g x* > *č ž š* before front vowel or iod. This descriptive order is clearly anti–historical, but it is an artifact of a formal apparatus that lacks an elegant way to express "unless". It is sad that uncritical students, ignorant of the basic facts, can delude themselves into thinking that an elaborate formal statement embodying this descriptive ordering has anything to do with the history of OCS (e.g. Wukasch). Evidence from many languages has shown conclusively that the re–ordering of rules is one kind of historical change, but one must be very careful with the facts in seeing how this kind of change came about.

64. OCS shows the beginning of a spread of the non-singular formant -*ě*- in such forms as *pokažete* or even *pokažate* 'show' from *po-kaz-a+*. This *ě* frequently appears with old *ye*-presents. Hypothetical older **pa-kāz-j-a-i-te* regularly yields *pokažite;* replacement of *i* (from **ai* after **j*) by *ě* creates a sequence *palatal* + *ě* which violates the regular constraint that only *a (*ā)* may stand in this position. Attestation is insufficient to show whether spelled "*ža*" (etc.) in such instances represents merely the application of a conventional graphic rule or perhaps the real pronunciation in some dialects (see *Gram.* § 7.21, E 9.1) The spread of -*ě*- or its reflexes in the non-singular imperative is quite general in Bulgarian and Macedonian and is attested early; in Ukrainian it apparently developed much later. On the other hand, the spread of -*i*- for expected -*ě*- (regular in SC and R) also shows up at the very beginning (*vъmetite*, Assem; *privedite, ostanite sę*, Ostr. 1056; *metimъ* Archangel Gosp. of 1092). In view of the general restructuring in various dialects, it appears that *rъcěte* and the like may be modelled on *moʒěte* (**mag-a-i-te*) and *veděte* (**wed-a-i-te)* as a replacement for possible **rъcite*, with archaic (?) root vocalism and consistent application of BdC and fronting.

65. The IE desinences were presumably **-om* and **-ont*. OCS furnishes no evidence that the 1 sg -*ъ* goes back to **-aN*, so in my generative analysis I posited simply -*ъ*. The attested 3 pl *ǫ* must derive immediately from **-āN*, but I concluded that it was plausible in synchronic terms to posit simply -*n* as the underlying desinence, with rule-inserted -*o*-. This is one of many cases where fairly clear comparative evidence allows us confidently to posit historical elements which cannot be recovered through internal reconstruction alone. In such cases it is concluded that the desinences changed so much – whether by phonetic evolution or by morphological replacement – that the continuity was lost.

66. OCS *na-vyc-aj+* is reflected in frequent examples from texts that were translated in the early period and it was adopted by some later writers. However, the expected *na-vyk-aj+* is attested in the Izbornik of 1073.

67. Just what phonetic shape might have resulted by lengthening of early Slavic syllabic liquids and nasals is impossible to say. The whole question of the origin and development of the rules that require a long root-vowel before **-ā*- remains to be examined comprehensively and in historical depth, though various aspects of the problems are dealt with in many handbooks. Vaillant's discussions, for example, do not attempt seriously to go back beyond attested OCS vocalism. By that time, however, surely the merger of **ī* and **ei* was beginning to have morphological consequences.

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68. Jeżowa 1968 provides a good start by separating the facts of OCS from those of later periods and different regions. Her data come chiefly from glossaries to manuscripts which have been well studied, and one suspects that her lists could be expanded and refined by materials from other sources. Attention must be paid to the whole system of derivational alternations in individual dialects. For example, Cz. *mihnouti* is apparently new, and no **mhnúti* (cf. presumable OCS **mьg-nǫ+*) is attested; however, OCz *míhati* is already in competition with *mizěti,* presumably older **miȝ-aj+* (conforming to BdC), though now with a new meaning 'disappear'. In what ways did different dialects innovate?

69. Occasionally post-verbal nouns like *mig* 'moment' (not OCS, not in Sreznevskij) and *klikъ* 'shouting, shout' (which is no earlier than 1187, if that) are cited as conter-examples to BdC. A post-verbal with normal vocalism is possible: **meig-aS* (Lith. *miēgas* 'sleep') would not fit the BdC formula, even if we admit that the absence of the noun in old texts is accidental. On the other hand, old *klik-nǫ+* and *klic-aj+* are related to a post-verbal *kličь (*klik-j-aS)* as *krič-a + (krīk-ě-)* is to *kričь,* with essentially the same meaning. It should be pointed out that there seem to be no post-verbals displaying *c/ȝ* from *k/g* in the absence of the verbal suffix **-ā-*. Here, for example, belongs *zrьcalo* 'mirror', representing the root **zьr- (zьr-č +* 'see') and an extended verbal stem **zьrk-* in the shape **zьrc-a(j)+* (cf. presumed OCS *po-zrьc-aj+*) plus the nominalizer **-dl-*. This verbal stem represents the new morphological extension of *c* for *k* as in *-mrьc-a(j)+*.

70. The Czech and SC nouns *smrk* m. and *smrka* f. 'juniper' presumably represent **smьrk-* and show no signs of the progressive palatalization. Synonyms based on **smerk-* are more widespread, e.g. Ukr *smerék, smeréka,* SC, Sln, Cz dial. *smreka,* and various forms with further suffixes such as R. Slavonic *smrěčьje* 'cedar'. Nor does the general **vьlk-* 'wolf' appear anywhere with *c* (cf. Mareš 56).

71. Since the KAI palatalization also affected *x (duxъ* 'spirit' pl. *dusi,* parallel to *otrokъ otroci, bogъ boȝi),* the morphological extension of BdC in formations with **-ā(j)-* might possibly have affected root-final *x* as well as *k* and *g.* The earliest attestation is the noun *nasmisanie* (1073), with *po-smis-aj + sę* 'mock' (Ham), so the stem *-smis-aj+* can be conditionally attributed to OCS. However, there is no obstruent at all in the correlated verb *smьjati smějǫtъ* 'laugh', and we may well be dealing with a **-sā-*suffix in a formation created after the *iurk*-rule had ceased to operate (cf. Vaillant 1966 332-333).

The productivity of this *k g x ~ c (ȝ) z s* alternation in verbs in various dialects, eventually died out, as even Jeżowa's restricted materials show. It is not without interest that the lists Rado Lenček compiled from the Slovenian *Pravopis* of 1950 for his Harvard dissertation contain significantly more verbs in *-cati/-zati* than the lists from the *Pravopis* of 1962 he used for his book, *The Verb Pattern of Contemporary Standard Slovene,* 1966. The arbiters of the standard language strongly prefer *-kati/-gati.* For Russian, the pervasive influence of Slavonic over the centuries shows up even in dialects, but it is clear that the *c/z* forms very early ceased to be productive.

72. The verb is not reliably documented in dictionaries, for it is vulgar and editors may choose to exclude it as indecent. The noun **sьčь,* attested in various medieval sources and Slovene *sǝč/säč,* represents **sik-j-aS.* Formally it provides the most plausible etymology of R pl. tantum *šči* 'soup', despite the off-hand rejection by Vasmer and others. As for Sln *sikati* 'gush, spurt; hiss' and R *sikát'* 'gush, spurt; urinate', they very likely show conflation of an onomatopoeic stem with **sik-* 'urinate' (Vasmer), but Vaillant 1974 205 adduces also *pó-sik* 'pizzle' (Siberian dial., Dal') and Cz. *posek* 'bull's penis' (Kott) and BR pl *siki,* P dial *siki posiki* 'urine'. It is possible that the verbs have been reshaped, and the nouns then follow along as post-verbals.

73. The oldest context-determined change of Slavic is also progressive: IE **s > *X* after *i u r k,* although the exact feature or features involved are controversial.

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74. IE *s > *X regardless of syllable boundaries.

75. Shevelov rightly distinguishes "transgressive" changes, which operate across syllabic boundaries, from those that are intrasyllabic, and he points out that very early changes (e.g. *s > *X) were transgressive (338). Yet instead of considering the possibility that BdC and vowel adjustment (which he divides into several stages) were also early changes, he simply holds that they helped "undermine the principle of intrasyllabic harmony". Not at all – Vowel Adjustment initiated the principle of the synharmonic syllable, which was then furthered by KI and KAI.

Another change which depends on the structure of the next syllable, though it is a regressive assimilation, is the raising of *e to *i* before heterosyllabic *j* (which Shevelov 339 for some reason doubts): *treies* > *trejes* > *trьje/trije*, *gast-ei-ami* > *gostьjemь/go-stijemь* 'guest (Isg)'. G sg f pronominal *maj-ai-aNS* > *mojeję* (cf. also I sg *mojejǫ*, GL du *mojeju*) show that *ej* from fronted *aj* was not subject to raising (cf. *t-oje*, *t-ojǫ*, *t-oju*) and thus demonstrate that the raising took place before Vowel Adjustment.

Some investigtors have attempted to link BdC with the progressive palatalization in Russian dialect *Van'ka* and/or Bg. dial. *majka*. These are obviously changes that took place after the phonetic loss of jers and thus are not connected with BdC, which operated well before the jers began to be omitted.

76. Examples are the theoretical I sg aor. of *ment-* 'disturb', *bad-* 'stab' *greb-* 'dig, bury', *nes-* (< *neḱ-) 'carry', *weʒ-* (< *weǵ-) 'convey', *rek-* 'say', *geg-* (< *deg-) 'burn' plus aorist-marker *s plus I sg. *-am* (< *om*) yielding *męsъ*, *basъ*, *grěsъ*, *něsъ*, *věsъ*, but *rěxъ žaxъ*. While these forms are only marginally attested in OCS (*Gram.*, 92), they are fully plausible for certain archaic dialects of the 9th and 10th centuries.

Before *t, old *s remained; by later morphophonemic rules, underlying *X, subsequently *x, like all non-labial obstruents, must appear as *s before *t, cf. *Gram.* § E 7.62 OCS *greb-* and *sop-* 'pipe' have infinitives *greti* and *soti* (Hamartolos Chronicle); other dialects may have agreed, or else they may have converted *p* and *b* to *s*, as in modern R *gresti*.

Note that there is no evidence for a possible infinitive formed by root in *-x + *-ti. The verb *vьrx-* 'thresh', with e–present forms, can be attributed to OCS (Vaillant 1966 168), but no infinitive is attested. Miklosich's lemmata *vrěsti* and *izvrěsti* surely represent a mechanical scholarly formula based on SC *vrijeći (vršem vrhao)*. Descriptively, one must posit SC *vrh- /vrěh-* (or something of the sort), and the special rule for infinitive-formation lumps *x* together with *k* and *g*. This does not constitute even the palest proof that any 9th-c. dialect had an infinitive with *-x + ti* treated as though it were *-k + ti*. (Nor is there sufficient reason for assuming *verx-* instead of *vьrx-*, cf. SC *vrći = vrijeći.*) It is a pity that Sreznevskij and the Prague *Slovník* have perpetuated the ghost-form "vrěsti".

77. This *X fits with Meillet's description (1934 § 114), but is upsetting to anyone wishing to make neat tables with point–of–articulation definitions (e.g. Shevelov 127). If we assume that *r was [+ high] in the dialects where the change took place, the *i u r k* environment is unified: ordinary non–high *s assimilated to [+ high] after a [+ high] segment. The [+ back] specification probably did not become obligatory until *X split into *s and *x, both independently distinct from *s.

78. For a partial parallel, compare modern Czech, where *u* and *o* are invariably rounded phonetically, but the phonological definition [+ high + back] is sufficient, the feature /round/ being automatic and redundant. See Kučera 26, n 6. (It is possible to assume such a system for Slavic at the time of BdC without changing anything else in my discussion. The two /–high + back/ vowels *ŏ and *ā would differ as /– low/ versus /+ low/. formula 3 would not be affected, for it includes both. This means that BdC could have occurred

even before the fundamental restructuring of the Pre-Slavic vowel system that decisively set it off from Pre-Baltic.)

79. See Meillet 1934 58–9, Vaillant 1950 § 55, Mareš § 23.

80. Let us look at the possible segments in terms of distinctive features (using the term *affrication* instead of *delayed release,* and taking for granted that all these segments are /–labial/ and /–continuant/):

	t / d	t' / d'	c / ʒ	ć / ʒ́	č / ǯ	t̡ / d̡	k̡ / g̡	k / g
anterior	+	+	+	+	–	–	–	–
coronal	+	+	+	+	+	–	–	–
high	–	+	–	+	+	+	+	+
back	–	–	–	–	–	–	–	+
affricate	–	–	+	+	+	–	–	–

The first step in palatalization must be that the /+back/ feature of velars becomes /–back/ : $k > k̡$. A further slight adjustment – not discussed in the text above – changes the /–coronal/ to /+coronal/ – $k̡ > t̡$. This shift surely underlies the development of a hissing offglide and the eventual change of /–anterior/ to/ +anterior/. The resultant ć may "harden": /+high/ > /–high/, i.e. $ć > c$. Alternatively, the offglide becomes more hushing, and /+ anterior/ > /–anterior/, i.e. $ć > č$. The affricates may become simple fricatives; this change tends to happen somewhat more readily in the voiced series ($ʒ ʒ́ ǯ > z ź ž$) than the voiceless *(c ć č > s ś š).*

Let me emphasize that the symbols *ć ʒ́ ś ź* are used in this study to reflect "soft hissing dentals" like the palatalized consonants of Ukrainian (e.g. ця 'this (N sg f)', дзявкати 'yelp', сяк 'thus', зяв 'abyss'), sounds which would be characterized as /–distributed/, see Chomsky and Halle 312-4. They are not to be interpreted as the /+distributed/ Polish sounds, which have a definitely hushing quality, e.g. in *ciało* 'body', *dział* 'gun', *siano* 'hay', *ziarno* 'grain'. I am assuming that values of the feature /distributed/ were non-distinctive in the dialects and periods treated. In theory, however, each of the segments defined in the table above could be split into two, one /+distributed/ and the other /–distributed/.

81. In the time between BdC and KI, it is highly possible that the results of BdC had moved from k/g not only to $t̡/d̡$ (see note 80), but further to $ć/ʒ́$; we know only that they remained distinct from k/g and t/d. The long historical process can be expressed more formally thus:

$$
\text{BdC}^a \quad
\begin{bmatrix} C \\ +\text{back} \end{bmatrix}
\; > \;
\begin{bmatrix} -\text{back} \\ \text{opt. } +\text{cor} \end{bmatrix}
\; / \; C
\begin{bmatrix} V \\ +\text{high} \\ -\text{back} \end{bmatrix}
\begin{bmatrix} -\text{syll} \\ +\text{nasal} \end{bmatrix}
\underline{\qquad}
\begin{bmatrix} V \\ -\text{high} \end{bmatrix}
$$

$$
\text{BdC}^b \quad
\begin{bmatrix} C \\ +\text{high} \\ -\text{back} \end{bmatrix}
\; > \;
\begin{bmatrix} +\text{coronal} \\ +\text{anterior} \\ \text{opt. } + \text{affr} \end{bmatrix}
$$

$$
\text{KI}^a \quad
\begin{bmatrix} C \\ +\text{back} \end{bmatrix}
\; > \;
\begin{bmatrix} -\text{back} \end{bmatrix}
\; / \; \underline{\qquad}
\begin{array}{l} -\text{consonant} \\ -\text{back} \end{array}
$$

$$
\text{KI}^b \quad
\begin{bmatrix} C \\ +\text{high} \\ -\text{back} \end{bmatrix}
\; > \;
\begin{bmatrix} +\text{coronal} \\ +\text{anterior} \\ +\text{affricate} \end{bmatrix}
\; / \; \underline{\qquad}
\begin{bmatrix} -\text{consonant} \\ -\text{back} \end{bmatrix}
$$

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KI[b] would convert any of the possible BdC results (*k̄/ǵ, t'/d,̓ ć/ʒ́)* to the required *č/ǯ.* We have adopted hypothesis (3) both because it is formally the simplest and because it covers all the examples. It predicts change before **ě,* but no examples occur. Hypothesis (2) would include **-ī̆ī̆* but again there are no examples; in any case the hypothetical **-ī̆K̄ī̆* would be subject to KI. The more traditional formulation of (4) would leave the vocative **atike* untouched – a not undesirable effect, but in spite of traditional discussions it is quite unnecessary. The simplest formal explanation turns out to deal with ALL the pertinent facts of declension.

82. I know of no report of an observed change from *k* to *č,* and thus I believe that the intermediate stage *k̄* (or *t'*) is required for KI. Phonetic shifts from *k̄* to *č* (i.e. from a stop or very lightly affricated stop to a clearly hushing affricate) have been reported from various areas, however. One I have heard commented on by native speakers is the case of the city dialect of Prilep, in Macedonia. Those born before 1929 distinguish three units, *k̄* vs. *č* vs. *k,* the *k̄* (< **tj,* or in Turkish or Albanian loans) being only slightly affricated. Speakers born after 1929 merge *k̄* and *č* in favor of *č.* A similar merger of *k̄* and *č* is in progress in the Veles dialect; Reiter 46 notes that *č* has no variants, while *k̄* not only ranges phonetically through *ć* and *č* to *t',* but it is often proceded by a palatal offglide; /braka/ can be braića. (The beginnings of such a change are reported by Stojkov 139 for Razlog, where word-final *k̄* (from older palatalized *t'* from **tъ*) is now generally pronounced as "soft" *č:* zeč ~ zek̄ < OCS *zętъ.* One hopes that Bulgarian phonologists and dialectologists will watch developments of this kind closely.) In the Proto-Slavic case we have a long timespan at our disposal; to assume at least the *k̄/ǵ* intermediate stage for KI surely is in accord with real processes of linguistic change, although the long-range diachronic statement of correspondence is: velar or palatal stop becomes hushing affricate *č/ǯ* before front vowel or iod. Newton, on the basis of rich comparative dialect material, assumes for modern Greek a sequence *k > č > c* (127f.), without, however, discussing the necessity for the middle link; it seems to me that assuming either *k > č* or *k > c* for individual dialects is more plausible, and in the latter type of dialect it is only a possible cluster *tš < tsj)* which ends up as the affricate *c.* Typologically, the fronting of velars to *k̄/ǵ* appears to be a universal tendency that often is implemented; what phonetic and linguistic theory must account for is why these palatal stops sometimes become hissing affricates tending to dental articulation (e.g. IE to Slavic, cf. note 2 above) and approximately equally as often become hushing affricates with alveo-palatal articulation (e.g. IE to Baltic). Why should both possibilities occur at different stages of a single language (e.g. French *cent* with *s < c < k,* but *chant* with *š < č < k)?*

83. One is tempted, however, to see grounds for phonemic *k̄/ǵ* earlier. Perhaps affective factors may have helped. Since both **-i-k-* (in all genders) and **-i-k-a* could serve to form diminutives, perhaps the **k̄*-variant – an unusual segment in the system – may have acquired sufficient expressive value to be used outside the old context. However, at this distance, in view of the continuing shifting and renewing of *k*– and *c*–suffixes in various dialects, it is impossible to point to individual cases.

84. I believe that the language of Cyril and Methodius was one that required quite abstract underlying phonological forms, but that restructuring was rapid and pervasive during the next few generations. Thus I consider **atiKaS* and the like possible for about 850, but **ati-ći, *atićiN* and **atićī* more likely for 1050.

85. It is uncertain for this historical stage whether to posit a single unit **X* (/+ high/, probably /–back/, but with the values of /anterior/ and /coronal/ determined by context), which would pattern with labials and dentals (including /–back –high/ **s*) in allowing any vowel to follow, or whether we hypothesize that two separate units had emerged, viz. fully specified /+ back/ **x* that would pattern like the velar stops, and /–back/ **š*

that would pattern like the palatal stops or affricates. Doubtless a major factor was the merger of *Xj and *sj into *š, whereupon surely the contrast *sā vs. *šā vs. *xā was established. There is no evidence to establish the relative chronology of this merger.

86. The process was surely *kau > *keu > *kū, but the diphthong *āN was now probably realized by a rounded vowel *ōN whose fronted variant was not perceived as belonging in the domain of phonetic *ẹ (representing /eN/ and /iN/). (Vaillant 1950 192 posits *-j-āN > *jẹ and then morphological replacement by *ǫ, cf note 46 above; his analogies are based on 11th–12th Bg.–Mac. dialect materials that are to be explained rather on the basis of the forms I posit.) Apparently the "soft" ć/ǯ of early OCS, which motivated the front variants of u and ǫ, were lost in most dialects reflected by the surviving OCS mss. The distribution of the letters "ju" and "jǫ" (and also "ě" and "ja") in OCS is inconsistent and too complicated to discuss here. Scribal difficulties were surely caused partly by the fact that the use of these letters was no longer motivated by easy phonological correspondences.

87. It is highly possible that γαρδίκι 'small fort' became a simple appellative in Greek, and its occurrence in a given area is insufficient to demonstrate the presence of a Slavic population. The native suffix –iki (< older –ikion) was widely productive, cf. medieval ἀστρίκι 'little star', ἄστρο 'star'.

88. It is uncertain just when Greek began to have a ts cluster, and precisely how it was distributed in different dialects. Plausible examples do not appear until the tenth centrury at the earliest. Surely all Greek dialects had k̑, and in some this might have become c, but the alphabet provides no way to make these distinctions – indeed even some modern studies of dialect are very obscure because authors fail to use special phonetic symbols for non-standard consonants. Further, there is no guarantee that Vasmer's material reflects the original Slavic pronunciations, for we must reckon both with evolving Slavic populations in the places concerned and with Slavic and Albanian and Arumanian interference over the centuries with Greek pronunciation of toponyms. And finally, not all the material is indisputably Slavic.

89. Kucija in Supr. translates 'τὰ βρεχτά' and refers to soaked uncooked beans, proper diet for an ascetic cleric. ESl. kut'já is a ritual dish made of cooked whole wheat with honey, served at Christmas and as an offering to the dead. It was probably associated with pre-Christian festivals, the word being borrowed through Balkan (Romance?) intermediaries. Supr. also has Sracin– eleven times for 'Saracen' and expected Srakin– but once; this probably shows that this name of the dreaded enemies of Christendom was actually known to the scribe. The lack of the first a is puzzling, however, and perhaps the c is due to some non–Greek intermediary, strange though that seems for this sort of word. A sequence *sarak– > *sark– > *srak– is possible; compare the suggested Gk. keramik– > *kermig– > črěmiga 'pot' (p. 21, above).

It is a pity that dictionaries often omit proper names, since they help furnish information about the productivity of phonological and morphological processes. Though sracin– is the usual stem in the texts, spellings with č occur at least four times in the Troickij copy of the Hamartolos Chronicle (13th–14th c.) and once in the Undol'skij copy (15th c.); Istrin does not indicate variants for these word (except at 369.3, where he records soročinьskyi from the Uvarov and Čudov copies (15th c.), perhaps because the pleophonic form supports his argument for the Rusian origin of the translation), and we cannot be certain how many more times such č–spellings occur. The possibility that they go back to a South Slavic foretext is strengthened by the presence of sračin– in the Life of Constantine (23.5, 23.18, 24.1 of Lavrov's edition).

The Hamartolos text abounds in names of all sorts, and on the whole the Slavonic merely transcribes. The declension of Foka 'Phocas' has the expected DL Focě; Luka has Lucě, as in OCS. The possessive pronoun is Focinъ (433.15, 571.2). The equivalent for

'Luke's' is not in the text, but elsewhere it is usually *Lukinъ*. (Yet *Lučino evangelie* also occurs in the heading to the Magnificat at the end of the 12th–c. Bg. Pogodin Psalter.)

It is not without interest that in the name of Βασιλιτζης, a Slav, the copies hesitate between *Vasiliсь* and *Vasiličь;* the Greek surely represents the Slavic suffix **itj-*, see note 91, below.

90. It must be emphasized that this single example is the only instance Vasmer characterizes (after expressing serious doubt) as demonstrating unshifted *k.* Two other possibilities are noted: Μποκοβικό (95) as **Bukovikъ* or prehaps **Bukovьсь;* Καμενικος (36) as **Kamenьnikъ* or **Kamenьсь.* This is extraordinarily weak evidence. The first may also be **Bukovьnikъ,* with Albanian *vn > n.* In view of the fact that Albanian has taken over the suffixes *–nik* and *–ec* (also *–kə < –ka)* from Slavic (cf. Jokl, *Slavia* 13, 1934–35, p. 289), and both Greek and Arumanian have suffixes of the shape *–ik,* and that finally many Balkan place–names have somewhat variant forms in two or three of these languages, Vasmer's material can be decisive only to illustrate such changes as those affecting **tart* (Gardiki < **gard-)* where the spelling is unmistakable and later non–Slavic phonological changes cannot be shown to have distorted the 8th–9th century sounds. See below.

91. Greek renders both *c* and *č by* τσ; the frequent κι or κει spellings can be taken as *k̂* or *ć* --what is important is that they cannot be interpreted as un–shifted velar *k*: this is "non-*k*". This point has not been grasped by many Slavic scholars, even though it was stated by Bidwell (although he was more certain than the evidence warrants that the affrication was not achieved until after the Slavs were in the Balkans, p. 125). Stieber (91) even reproaches Bidwell for believing that spellings like Γαρδικι and Καμινικια (cf. Kamnica or Kamenica, but also Kamenika, in several places in Slavic territory) showed unshifted *k,* "for, after all, we have such forms as *zemljanika, eževika* ['wild strawberries', 'blackberries'] with *k* preserved in the suffix *-ika* until today in Russian". [On botanical *-ika,* see above, p. 20.] This refusal to look carefully at non-Slavic systems, combined with the juxtaposition of utterly heterogeneous data, is unfortunately not untypical of much contemporary writing in Slavic historical linguistics.

92. The discussion in Ramovš 1924 runs from 265 to 276, with copious data. It is not easy reading, because Ramovš is uncompromising in reproducing the spelling of his sources, be they medieval German or Latin documents, 16th–c. printed works, or contemporary scholarly field notes. It is probable that 8th–10th c. Slovene had unaffricated **k̂* (later *č)* for **tj,* beside **ć* or **c* for both BdC and KAI (along with some borrowed words), and **č* from KI. Some of his reasoning is vulnerable, but objections lead not to a clear decision for old **k* evolving to **k̂,* but rather to the conclusion that the early toponymic evidence is simply meaningless on this point (because the Bavarian phonological system hat no obvious niche for any one of the three units, *k̂ č ć,* and indeed had trouble coping with Slavic *k).* Ramovš later offers further explanations (1936 52-3) which, while plausible, show that the old spellings offer no more than a point of departure for speculation.

93. Latin documents as early as 860, written most probably by Romance-speaking scribes, have spellings like *Sabniza* (for **Žabьnica),* Ramovš 1936 52 and passim. Note that Ramovš finds no evidence at all for non-shifted *k* in the whole area.

94. Shevelov 350, to take one example, remarks that Bav. *k(c)h* "spellings are supposed to denote Sl k̂". Bidwell (124) is not clear, but his conclusion, like Shevelov's, is that BdC overlapped with KAI (126).

95. Shevelov 350 apparently takes *Logatec* to be directly descended from the form in *-ti-cu(m);* Bidwell 124 suggests substitution of suffix. The latter is probable, for the word could at once be perceived as a native formation: *lǫg-ъ* 'low-lying meadow by water; scrub

forest' combined with -at-, cf. modern *logàt* 'reich an Hainen' (Pleteršnik) and the -ьсь suffix often used for towns. (Shevelov mistakenly calls Logatec a river.)

96. I base this suggestion on principles used by Ramovš to explain the complicated history of some Slovene place-name (1936 52-3). The first step would be *serdik-*, perhaps with shift to masculine gender, as was common with names of towns (cf. Dalmatian *Solin* < *solynъ* < Rom. *Salona)*. The locative of the later stem-shape would be *srědicě*, heard by the Greeks as *striaditsa* and understood to mean 'at Sofia'. A Greek could them abstract the *s* as a form of εἰς [is] 'at, to', yielding the name spelled Τριάδιτσα in several sources (see Vasmer 1941 259). – – Shevelov 302 for some reason takes *Srědьсь* as an illustration of KAI, a misunderstanding compounded by his notion that the suffix in *Kostolac* (G *Kostóca;* medieval *Kostolьсь*, a town in Serbia) is that of Rom. *Castellaceus;* however, Rom. stressed *a* would yield early SC *a*, not *ь* (which presumably was phonetic ǝ in that area).

97. Evidence for the monophthongization of *i-* and *u-*diphthongs is uncertain. No sure trace of *ei* or *ai* is to be discerned in Greek or German toponyms or other borrowings. (Shevelov's argument 289 that Germanic spellings reveal Slavic diphthongs is mistaken. Accepting a Germanic source for the tribal name *Dudlěbi,* cf. Vasmer s.v. *duleb* (Shevelov erroneously omits the asterisk), in the Austrian area and OR texts, we still have no principled way of deciding whether the Slavs borrowed a diphthong or, having already eliminated diphthongs, substituted the monophthong ě for the foreign complex sound. As for the Rus princely name *Gъlěbъ,* Vasmer posits an Old Swedish dialect monophthong in *Guðlěfr* (Shevelov again neglects the asterisk), but very likely by the late 9th century East Slavic monophthongal ě was a closed vowel which could well be the most suitable substitute for the diphthong in the usual *Guðleifr.)* The fact that *ӯ* was apparently heard as *ū* by Bavarians (7th-8th c.?) may indicate that the non-distinctive rounding was still present, which in turn implies that *au* had not yet become *ū*. (Shevelov hypothesizes early monophthongization of *au* and a long co-existence of two long *u*'s which were never confused; he alleges that some modern Ukr. dialects have "two *ū*-type phonemes" (277). The parallel fails, because these dialects do not have distinctive length and are typologically quite different from Common Slavic.) The same conclusion may be drawn from borrowings from Romance, where closed ǫ was replaced by *ӯ*, e.g. *Salona* > *salӯn-* > *Solin.* (In the Alpine area, Bavarian substituted the diphthong *iu* during the 9th-10th c; Slavic *ӯ* > *i* by about 1000; for the very complex evidence see Ramovš 1936 36-8.) Greek provides no help at all, for at the time it had no *au/ou* diphthong, so Slavic *ū* and *au* both were taken over as *u*. The forms *mayúla* 'mound, rise' and *karúta* 'Garbottich' (if directly from Slavic *magӯlă* and *karӯtă*, cf. R *mogyla, koryto,* and not Alb. *mogule* and *karutě*) do not prove rounding in Slavic *ӯ*, but merely that the high back rounded vowel was perceived as *u* rather than *i* by speakers of Greek, which offered no other possibility among high vowels. Similarly at a later date Greeks and Serbs substituted *u* for the Turkish high back unrounded ı: *kalıp* 'form , mold' > Gk. *kalúpi,* SC *kàlup* (but Bg. *kalъp,* with the mid unrounded vowel substituted. Ordinarily *ӯ* is represented by Greek and Albanian *i,* reflecting the Slavic merger of *y* and *i* which began in the south no later than the 11th c. Shevelov 278 is on shaky ground in claiming *ov/av* as old in borrowings in Dalmatia; since these areas remained non-Slavic for centuries, we must reckon with constant renewal of the Romance forms: such *ov/av* forms show late adaptations. As for *Tovrljan* (town, not river as Shevelov says, in E. Serbia), the connection with the *Tauriana* of the Peutinger Table is so fraught with phonetic (not to mention geographical) difficulties as to deprive it of any probative value. Again, Arumanians continued to frequent the area; their pronunciation surely affected the Slavic toponyms. Shevelov's decisions in this area are unfortunately based largely on the work of Petar Skok, who amassed impressive lists of data but whose interpretations are often erratic and contradictory. (A methodological note: Shevelov 278 quotes Balkan

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and Belorussian toponyms and concludes: "The inference is that when the Slavs invaded the Balkans the monophthongization of *u*-diphthongs was completed or in the process of completion but that at the time of *their* (emphasis supplied, HGL) first contacts with the Balts in Northern Belorussia they still had diphthongs. Hence the monophthongization of *u*-diphthongs is to be placed in the sixth century, probably the early part." The Slavs who invaded the Balkans in the 6th century were NOT the Slavs who moved into the Smolensk-Vitebsk area sometime between the 6th and 9th c. Were they even sixth or seventh cousins? Why should all dialects develop at the same rate?

98. Modern forms of **kotьcь* ordinarily refer to a shed or pen for chickens, pigs and the like, cf. SWawski s.v. *kojec*. Mikkola 61 believes the Finns took the word from the Estonians, who borrowed it from Novgorod. The R pl. tant. 'fish-trap' is noted for Siberia; one would like to have more information about its distribution.

99. Gluskina 1966 and 1968; Trubačev s.v. **cědjь (kež* for usual *cež/ceža* in a variety of senses like 'gruel, slurry'), **cěvina (kivína* 'part of a *cep* ('flail')'), **čěvьkъ (kevók* 'stick, handle on *cep!* but otherwise this derivative means 'bobbin, spool' as a weaver's term, or some other pipe–like object). One must be cautious about admitting original **k* here, for **k̑* or **sk* or **sk̑* might be involved; moreover these dialects have long been in contact with Finnic (and perhaps Baltic) and in general show cases of confusion of palatalized *t* and *k* with the single affricate expected for both **c* and **č.* In conjunction with the clear and early tendency for scribes to eliminate **c* in declensional forms of *k*–stems, however, it is not unrealistic to suppose that some of these domestic terms may reveal very old phonetic relics.

100. The idiom in the form *stegí ne vidát'* (see Vasmer s.v. *zga*) supports this etymology, although the meaning of 'path' for the putative noun *zga* has completely been lost here and in the other idioms listed by Dal'. Filin illustrates the meaning 'loop on horsecollar (through which reins are passed)'; Roman Jakobson suggested years ago in his lectures at Columbia – sessions attended by many Russians who had no hesitation about expressing their opinions – that this and similar meanings having to do with details of harness were simply attempts to justify the idiom. Roughly, "it's so dark you can't see an object you know to be a short distance away" – the native, when directly asked precisely what the object is, is surprised and embarrassed not to know and is likely to invent a meaning. One cannot exclude the possibility that even *stegí* represents a popular etymology, with a full word "restored" instead of a "sloppy" pronunciation.

101. Henning Andersen has argued that much of central Slavic had no stop **g*, but the continuant **γ*, and that therefore the palatalization resulted directly in *ž* or *ź*; I suspect that the *γ*–area was considerably smaller, in the 8th-9th c., than he wishes to believe, and in any case a *g ~ ź* alternation must be assumed for large areas with plosive *g*. What is certain is that *ʒ* in the historical period is an alternant of *g* only in the south of the Bulgaro–Macedonian area and in northern West Slavic, i.e. in peripheral remnants. The *ʒ*–letter was not used consistently in OCS, while in Rus and in the Serbian, Croatian and Bohemian lands it functioned only as a numeral ('8' in glagolitic, '6' in cyrillic), never as a phonetic symbol.

102. This sort of innovation of single forms according to an old pattern is easy enough to account for: one form (e.g. the adjective *varjažьskъ*) is taken as an example of a regular pattern (*k g x* elsewhere alternate with *č ž š* before *–ьn* - or - *≠ n*–), and assumed to be derived from a base form with *g.* Yet there are sporadic innovations that are much more opaque. Standard Macedonian has an adjective *beležan* 'marked' (cf *beleg* 'mark', *beleži/beležuva* 'to mark'), which might historically be a passive participle from a no longer extant **belež–a.* Yet in a dialect near Bitola the form is reported as *belezan* (Groen); there is no

clear motivation for *z*. More generally, Macedonian has a new *g* in *vlegol* 'entered' (OCS *vъlězlъ*) beside present *vleze*, and *molgol* 'milked' beside the expected *molzol* (< *mъlz-lъ*); in both cases Slavic *z* corresponds regularly to IE *ǵ*, and the *g* is a fairly recent innovation. [A similar innovation apparently is to be ascribed to certain Rusian dialects; Sreznevskij (s.v. *vъlěči*) cites *vlegoša* from the Galician–Volynian Chronicle, s.a. 1165, 1175.] Further, the adverb *brgu* is surely a false substitute for the reflex of OCS *brъzo* 'quickly', very probably on the basis of *brъzě* (cf OR *bъrzě*), interpreted as "brъzě", against the background of common doublets of the type *dobro* = *dobrě*, and perhaps a comparative *brъže* (cf. SC *brže*).

The inherited *g* ~ *ž* alternation is now very restricted in Macedonian, essentially occurring in *striže* 'cut hair' and *struže* 'scrape' vs. *strigol, strugol*. However, some of the western dialects have an apparently productive alternation *g* ~ *ʒ*. The diminutive suffix –*e* (probably historically *–ę* [t]–) is accompanied by the historically expected *k/č* alternation: *jazik* 'tongue' *jaziče*. The parallel is *g/ʒ*: *noga* 'foot, leg' *noʒe, kofčeg* 'box, chest' *kofčeʒe* (but OCS *kovъčežьcь*), cf. Vidoeski. (In central Macedonia, where *ʒ* is generally less common, we find *nože, kofčeže,* and the like.)

103. Awareness of the original foreign pronunciation in situations of continued contact is a factor which must always be reckoned with in examining toponyms. In southeastern Colorado are *Ratón Pass* and the town of *Alamosa,* now pronounced with the vowel of *moan* essentially in accord with the local Spanish pronunciation. In the early part of this century, however, they were "Ratoon" and "Alamoosa" with the vowel of *moon* – a fact I have no explanation for in terms of either the English or Spanish pronunciations that might be conjectured; I know only that that is how those places were called by my contemporaries and elders in the 1920's and '30's. Compare *vamoose* < *vámos* (or *vámonos?*). Examples of continuing Slovene–German adaptations in both directions are noted in Ramovš 1924 passim.

104. Dubrovnik *Knégo* as a name or nickname (it occurs once in 1420) and the noun *knegovanje* 'rule' surely are back-formations from *knežić, knežiti* and the like, supported by *kneginja* 'princess; personal name' and derivatives (see the Zagreb Academy's *Rječnik*). Shevelov 349 refers to Slavonic "knegъ" from "Pogodin's Psalter"; this is almost certainly an error going back through Miklosich to Vostokov. Jagić used Pogodin 8, a Bg. psalter of about 1300, for variants in his edition of the Bologne Psalter. Vostokov's alleged "knęgi židovьstii" would presumably be in the commentary to ps. 118:53, but Jagić's failure to note it indicates that a normal form occurs. Thanks to V.V. Kolesov, who checked the manuscript for me, I can report that the spelling is *knęzi*.

105. Assem. substitutes *obrazъ* ' image' (a contextual confusion, but one which probably indicates something odd about the word in the text the scribe was copying), Ostromir (and a series of later mss.) *cęto* (< *kint–?,* ultimately probably Lat. *cent–*; cf. Vasmer s.v. *cata*). The Archangel Gospel of 1092 has *stьglęzь* which might reflect OCS *stьlęzь* with KAI in the first syllable. I consider the *g* a random scribal error; James Ferrell (SEEJ 14.421) sees it as the local *g*-pronunciation (i.e. *stьlägь*) interfering with the scribe's effort to write proper Slavonic.

106. Note that in both cases the *ščьlęgъ* is paid to the Khazars: this is an "international" monetary unit. At the time the copies of the Chronicle were written (1377 and later), the form *šeljag* was already current. It represents a borrowing from Polish *szeląg*: note the nasal vowel replaced by spelled *ja* (and cf. Ukr. *zvytjažyty* < Pol *zwyciężyć* above and *mosjažnyj* < Pol. *mosiężnyj* below). Prof. Mareš informs me that older Cz. *tolar* was used in the first part of this century for the U.S. dollar; since about 1930, only *dolar* is possible.

107. Cf. e.g. Kiparsky 1934 223 f. This is precisely the sort of word which can be borrowed several times. Since such rings were carried back and forth through the Slavic world and Central Asia, a number of pronunciations must be accounted for. Surely R *ser'gá* and the many Turkic words with similar forms all belong here (despite Vasmer s.v. *ser'gá* and *user-jaz'*); Omeljan Pritsak informs me that no plausible Turkic etymology has been found.

108. Vasmer's putative **mosjag* (q.v.) is intended to explain the surname Mosjágin, though **mosjaga* is required to justify the suffix –*in*–. This too could be derived from Ukr. *mos-jažnyj, mosjažnyk* (cf. *zvytjaha*).

109. The name of the Polish city of Grudziądz, in originally Old Prussian territory, might possibly reflect Baltic **graud-ing-as* 'rich in grain' but the medieval attestation shows rather a Baltic **graud-en-* with the Polish -≠ *c*- added, cf. Kiparsky 1934, 39, 165. Shevelov's assumption, 350, that the root had the shape **grŭd-* is gratuitous. The connection he wishes to make between BdC and the change of ancient **ū-* to Com. Sl. *y* is apparently the result of his desire to prove the late date of BdC.Lith. *grūdíngas* has a different ablaut form of the root (see E. Fraenkel, *Litauisches etym. Wörterbuch*, s.v. *graumenys*).

110. In the narrow OCS cannon only three examples occur: *ašte e lьzě puštati ženǫ svojǫ* 'if it is permitted to send away one's wife' (Cloz 2b8, in the sermon attributed to Methodius); *ne lьzě* 'one cannot, οὐκ ἐνόν' and – NB with a different kind of negative – *něstь mi lьzě inamo iti* 'it is impossible for me to go anywhere else, ἀμήχανόν μοί ἐστι (Supr 370.66; 170.22). – Neither Cloz nor Supr uses the letter "ʒ" except as a numeral. Cloz has to use "ě" to indicate the soft *z* < *ʒ* (cf. spelled *zemlě* for **zemlja* and the problem of the feminine of *vьsь*, *Gram.* § 4.21, E 18.81). Supr on the whole follows glagolitic usage of "ě" after consonant. – Post-OCS attestation indicates a tradition based on the spelling *lьzě* (see Sreznevskij), but there is some evidence for **lьʒě* quite late (*lьʒě*, 15th c.) along with signs that the scribes were uncertain about the word: *lьʒa* (properly the spelling for a f. adj. 'false' in a Bg. ms. of the Hexameron of John the Exarch) and *něstь...lьʒe* (the sole example in Daničić's dictionary of Old Serbian). This final example is from Domentian's Life of Sava, but as it is in an aphorism from St. Basil which occurs in florilegia, it is very likely a citation (for a different translation, with οὔτε ... δύνατον rendered *ni...možeši*, see Tschižewskij's reprint of Semenov's ed. of the *Pčela (Melissa)*, Slavische Propyläen 7.365), and not part of Domentian's own language.

111. **Polьʒa*, Vaillant's argument continues, made its *ʒ* subsequently per BdC, and then created a new locative-dative *polьʒi* "comme plus tard nom. *pól'ga* du russe dialectal, qui s'explique par la réfection sur -*l'zi* d'un nominative -*l'ga*, conséquence de l'élimination de l'alternance *g:(d)z*."

112. Usual OCS *potrěba* translates *khreía*. A lone non-OCS *protivu trěby* 'pros khreían' (Čudov Ps., 11th c.), in the face of the *potreby* (G) of later copies, is not quite strong enough to guarantee OCS **trěba*. The lemma in Sadnik-Aitzetmüller should read *trěbě*.

113. Similarly *godě byti* 'be pleasing, please', replaced within OCS by the adj. *godьnъ* or the impersonal *ugodьno*. Reflexes of *trěbě* have survived into modern Slovenian and Croatian dialects *(trębě, trijebi)*. In Slovene and Czech *treba/třeba* + 3 sg. neuter of 'to be' (and D of person) means 'be necessary, have to'. R. *potrebnyj, potrebovat'*, etc. are Slavonicisms, the root surely being **terb*.

114. See Vaillant 1974 242. Compare also the noun *polьʒenie* 'benefit, alleviation' in a Slavonic text of Czech origin (see *Slovník*) and in a work by the Bulgarian John the Exarch (Sreznevskij).

115. It should be emphasized that in some dialects the alternant of /g/ may well have been a *ź* that was phonetically distinct from both *z* and *ž*, while in others it may have fallen together with /z/ before front vowels. Indeed, it is probable that the letter "ʒ" had values that varied with time, region, and church tradition. Thus forms like *polьźevati* and *polьźiti* must be reckoned with in attempting to account for the attested spellings and their place in the various linguistic systems.

116. Pre-Czech *lьźa* would yield *lzě* by the regular fronting of *a* to *ě*, a dialect process not to be confused with the older Vowel Adjustment, cf. note 60, above.

117. One wonders about Latvian *palîgă* 'for aid' and *palîdzêt* 'to help', seemingly isolated in Baltic. Durnovo plausibly argued that R *pol'za* is a Slavonicism (see Vasmer).

118. *Nelga* occurs in the oldest copy of the Novgorod Chronicle (s.a. 1128; later copies all *nel(')zja)* and in a 15th-c. copy of a probable 12th-c. Novgorod original (see Sreznevskij s.v. *lьga*).

119. The comparative *lьžii* or *lьžaje* (not certainly OCS, but early East Slavic; see Sreznevskij) and derived verbs like Pol. *ulżyć* 'ease, lighten' helped maintain the network of semantic connections and the consonantal alternations. See Sławski s.v. *ldza. Lьgota* is surely a post-BdC formation, see note 18 above.

!20. Voiced affricates do not always behave exactly like the corresponding voiceless ones. Thus the expected affricate *ʒ* from *g* by KI is attested as *ž* except after *z*, while expected *ʒ* occurs as *z* (except after *z*) in most areas, yet the voiceless *č* and *c* remain stops. Similarly in Rumanian, *ʒ* is replaced by *ž* in some dialects (standard *joc* 'game', dial. *gioc*), while *z* for *ʒ* is standard (*auzi* 'you hear'), but *č* and *c* remain (*cinci* 'five', *poți* 'you can'). The Germanic words in *-ing-*, which by my hypothesis entered Slavic long after BdC had started to affect the many words containing *k*, may have provoked an extension of the more limited older rule. In any case, the number of examples with *g* is very small.

    Voiced consonants not uncommonly exhibit sporadic anomalies, e.g. in Mac. dial. *železdo* for usual *železo* 'iron', *ʒizd* 'wall' for more wide-spread *ʒizd* (itself a complex back-formation from the old verbal root with *d/dj*, cf. OCS *zьdati ziždetь* and note 38; OCS had *zьdъ* and *zьdь*, standard Mac. has *ʒid*), and the toponym *ʒupa* for usual *Župa*, Vidoeski, 59, 70. In Bulgarian dialects, 'star' also occurs as *ʒvъzda/žvezdá* or even *ʒuvázda/žuv'ázda*, see *Bъlgarski dialekten atlas*, II, map 54, and III, map 65. In Dihovo, beside usual *nazorlif* 'cross-eyed, wall-eyed' is found *naʒorlif*.

121. Cf. Vasmer s.v. *jagá* I, and Sławski s.v. *jędza.* Trubačev *ęga/*ęza:* it is puzzling that his alternative form has *z*, not *ʒ́* or *ʒ*.

122. In Macedonian too this word is anomalous because it retains the nasal in virtually all dialects, although otherwise the old nasal vowels were lost in most areas centuries ago. *Janʒa* (dial. *jənʒa, jonʒa, jenʒa*) means 'fever, chill' and also 'horror, nightmare', and also 'stubborn, annoying person'. Curiously enough, the word has disappeared from dialects where the nasal vowels have been kept. The expected *(j)eza* is found only in a few places in eastern Macedonia.

123. This assumes N sg m *vьsь* etc. to be levelled out analogically.

124. Van Wijk does not mention the pronoun *sicь* 'of this kind', which has the same hard-soft mixture as *vьsь*: *sicego* but *sicěmь*, etc.; contrast *takъ* 'of that kind' – *takogo* but *tacěmь* etc. The word is surely dialectal (I suspect Moravian), however, being replaced even

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within OCS by *sic–ev–* (cf. *tak–ov–*). Moreover it is only the Supraslienis which provides a reasonably full paradigm; our rules are based on a total of five forms with –*cě*– (1 sg m., 2x, G pl, L pl, I pl), but countered by G pl *sicixъ* in the Zogr. Fragments. In the Izbornik of 1073 *sicixъ* occurs (also an unexpected long form *siciixъ*, see Sreznevskij s.v. *sicii*), apparently without –*cě*–forms, while the R. Slavonic Uspenskij Sbornik of about 1200 has only two –*cě*– beside five –*ci*– forms, along with some substantival forms that are unexpected in terms of our meager OCS attestation. In short, regular (or regularized?) soft–desinence forms do occur, and this pronominal stem has further idiosyncrasies. A careful check of the oldest texts from Rus should be made to determine the full extent of the variation. On the other hand, for *sice* 'thus' (the only form except A pl n *sica* that occurs in canonical OCS outside of Supr), one 14th–c. Bosnian Slavonic text has *siko*, mislabelled as OCS by many scholars since Jagić included it in his glossary to the Marianus. Serbian Slavonic also provides examples of *sik–ov–*. The *sik–* ~ *sic–* alternation plus the –*cě*– forms of OCS fit the hypothesis that BdC was late and that this stem was levelled in both possible ways. Yet the total absence of forms like "*otьcěxъ*, *srьdьcěxъ*" in the face of numerous attestations of –*ci*– in all of the oldest manuscripts militates against this solution.

Pronominal forms often have idiosyncrasies that are anomalous in a given system. For example, in the spoken Slovenian of Ljubljana (casual educated style as well as dialect), the written genitives *takega*, *vsakega* and *drugega*, from *tak* 'of this kind', *vsak* 'every', and *drug* 'other' are pronounced *tacga/taʒga*, *wsacga/wsaʒga*, and *druzga*. However the datives *takemu*, *vsakemu*, *drugemu* are pronounced *takmu*, *wsakmu*, *drugmu*, and forms like *takih*, *vsakih*, *drugih* show no mutation even before front vowels probably from *ě* < *ai*. Adjectives (e.g. *velikega* or *dolgega*) show no mutation. Descriptively this is merely a puzzling fact, but here we fortunately have enough historical and comparative data to reconstruct a long process whereby (1) *c/z* that legitimately resulted before *ai* were generalized to occur before front vowels of later origin, and then (2) the *k/g* was restored in most forms, cf. Ramovš 1924 289ff.

I venture to suggest that *sicь* had a special, idiosyncratic history.

124a. Birchbark writ 439 now attests *vъxo* (ca. 1200), while writ 497 (late 1300's) affirms *voxi* N pl m., see A. A. Arcixovskij and V. L. Janin, *Novgorodskie gramoty na bereste iz raskopok 1962–1976 godov* (Moscow 1978) 42–3, 90–91.

125. Compare in a 1546 copy of a somewhat older Croatian čakavski text (very likely a 15th–c. translation from Latin), the *Ljetopis popa Dukljanina*, the retention of the usual Slavonic *židove* 'Jews' beside examples of the newer *žudiji*. Both go back to Latin *Judaei*, the old form *žid–* showing an ancient but puzzling fronting of the vowel (presumably from some trans–Alpine Romance dialect with *žüd–*), and the newer *žud–* betraying a more recent borrowing from local Romance speech.

126. As a typological parallel, compare the Lithuanian treatment of new nouns with stem–final *or* borrowed, usually through Russian, from international sources. For other stems, the final consonant is regularly interpreted as hard and the stem is assigned to the first declension: e.g. *tennis* > *tènisas*, *radar* > *radāras*, *kefir* > *kefỹras*. Stem–final *or*, however, (especially if *t* preceeds) is nearly always taken as *or'* (with palatalized *r'*) and assigned to the *u*–declension: e.g. *profesòrius*, *radiātorius* (though there are a few exceptions, e.g. *tènoras*, *prokurôras*). Final *er* is rendered with *r'* and usually the first declension (e.g. *fèrmeris* 'farmer', *revòlveris*, *buldòzeris*) but when the preceding consonant is palatalized the *u*–paradigm is selected, e.g. *misionièrius*, *pionièrius*.

127. Kortlandt has recently advanced complicated hypotheses involving laryngeal consonants, or at least a vaguely-defined laryngeal feature or laryngealized vowels, for Slavic up to about 800 AD. The same results would be achieved with greatly improved plausibili-

ty if he merely substituted a frankly abstract diacritic to label morphemes as heavy (mostly formerly laryngeal) vs. light (non-laryngeal), since such devices are needed for contemporary Slavic languages in which no one claims to observe phonetic laryngeal qualities.

128. The picture is not significantly changed if other proposals for the value of the old three-way contrast are accepted, e.g. no mediae, but plain vs. glottalized vs. aspirated *(t t' th)*, or even the addition of a fourth unit (such as *th,* tenuis aspirata). Slavic and Baltic evidence is irrelevant for the question of the exact make-up of the IE consonantal system.

129. An excellent – though by no means unassailable – summary is to be found in Garde. [See the Halle-Kiparsky review, *Language* 57, 150–181.]

130. Baudouin de Courtenay originally maintained that the position of stress played a role in conditioning the progressive palatalization, but this contention was easily refuted by subsequent investigators. Intonational features were often mentioned to explain N pl m *oi* (Sl *-ai) > *i,* but L sg *oi > *-ě,* but the very isolation of this use of tone to account for segmental developments made scholars suspicious. One might insist that apophonic variation in root-vowels was determined by prosodic factors, including the position of stress, e.g. in such instances as *bьr-a-ti* but *ber-ǫtъ,* *u-mer-ti* but *u-mьr-l-i* (OCS *umrěti; umrьli), iz-lěz+* but *iz-laz-i+,* or *wert* vs. *wart* vs. *wirt* (in OCS *vrěteno, vrat-i+, vrьt-ě+).* I find it more likely to assume that as early as Proto-Slavic such alternations had become fully morphologized (although they were still subject to analogical and phonetic influences), and descriptively they are to be handled by means of diacritics on the individual morphemes (cf. *Gram.* 184–6). The situation at the end of the Common Slavic period changed radically with the weakening of the jers and the restructuring of the vowel system. At that point, surely, the position of stress (and possibly other prosodic features) played a decisive role in the qualitative development of vowels in some dialects, particularly in those underlying Slovenian.

131. In some traditional works on Common Slavic, especially those published in Poland, a distinction is made between "hard" and "soft" syllabic *r,* thus *krm*-but *kŕn-.* No such distinction seems to have been observed in a living language, however.

132. Vaillant 1950 25 proposes *K > *č̌> Balto-Slavic *š* > Slavic *s,* a progression dictated by his basic hypothesis of a relatively unified Balto-Slavic stage. Context-free shifts of *š* to *s* are perfectly possible, and generally accepted for Latvian and Old Prussian. However, there is usually an outside factor involved, e.g. Finnic influence on Latvian, Low German on OPr. Rather than invoke some similar adstratum or substratum for Proto-Slavic, I prefer to assume the typologically common divergent development of a palatal stop to a hissing affricate in some dialects (Pre-Slavic) and a hushing africate in others (Pre-Baltic).

133. If the particle *žde* indeed goes back to the neuter *tod* plus the anaphoric *jod* (Vaillant 1950 200), its independence as *dja* could be ancient or as *dje* more recent.

134. It should be emphasized that the OCS data for these tenses do not agree with the Old Czech data, which unfortunately are obscured in important ways by the imprecise spelling systems. Czech scholars generally adhere to the unfortunate tradition that OCz and OCS morphology was essentially identical; at least for aorists and imperfects this is clearly incorrect.

135. OCS neuters like *osьlę̨te osьlę* 'ass' show synchronic NA /osьlent-∅/, G /osьlente/, and a rule deleting word-final *t,* but they tell us nothing about the original date when such a rule became necessary.

136. The raising of *a to *y is surely to be interpreted as assimilation. This requires that *N be specified as /+high/ which is fully plausible in view of the fact that in many languages an indefinite final nasal is ordinarily realized as [ŋ]. We have already assumed that *X is /+high/. The rule would then read:

$$
\begin{bmatrix} V \\ +back \\ -long \end{bmatrix} > \begin{bmatrix} +high \end{bmatrix} / \underline{\quad} \begin{bmatrix} -syllabic \\ +high \end{bmatrix} \quad \#
$$

Since in fact the cases all involve IE short *o (for no instances of final *an/*am or *as occur), we could place the process in the earliest period when *o ≠ *a and state it as *o > *u, i.e. a rounded vowel must be high before a high non–syllabic and word–boundary. It is highly possible, however, that raising occurred before *N much earlier than before *X and that separate rules should be formulated: see below.

137. Cf. also –ь from IE syllabic *–m in consonantal stems, e.g. materь < *māteriN < *māterm.

138. Recall that the *ruki*–rule had a phonetic stage which changed *s to *X after i u r k, and a later morphologized stage wherein every *s which was a desinence or part of a desinence became *X (see also note 76 above). The *s in the IE suffix *es ~ *os would not be affected by either process (for no desinence is involved), so *-os would yield Slavic *-as. Thus *nebas and *slawas do not meet the structural description of the raising rule formulated in note 136. Loss of final *s is included in the rule deleting all final obstruents, leaving here word–final *-a > OCS –o.

139. We assume first that final *iN and *uN lost the nasal very early. For a later period, the general rule is that any front vowel + N yielded ę, but a high back vowel apparently resisted nasalization, so the origin of ǫ must be restricted to *āN. The textbook exception is the infinitive *dǫti to pres. dъm-e- 'blow' (cf. Pol. dąć dmie), but Vaillant 1966 161 is surely right that this is not a Common Slavic formation; the formula *um > ǫ remains only a hypothetical possibility, and in any case could not apply before word–boundary.

140. Schematically, the older contrast of Apl in *-āns to the *-ās of Npl and Gsg would look about like this:

(1) daušānX : ženānX   (2) Raise > daušŷNX : ženŷNX
    daušāX   : ženāX   daušŷX   : ženŷX
(3) VA > daušīNX : ženŷNX   (4) X–loss > daušīN :   ženŷ ⊣ ženŷN
        daušīX   : ženŷX   daušī   :   ženŷ

At this point the type "daušī" is replaced by the type *daušīN.

141. Vaillant's statement (1958a 48) that –ě was the denasalized form of –ę does not fit this particular case, as the reflexes of sěmę show. In general, denasalized ę can remain separate from the reflexes of either ě or e (e.g. in many Slovene dialects), or it can merge with ě (as in old Macedonian and in Kajkavski), with e (as in Bulgarian, cf. meso but mjasto), or with the fronted variant of a as in ESlav or Czech, old sěmā like volja [voļä]).

Vaillant's knowledge of the facts of OCS was unparalleled, but I do not find his linguistic discussion of ě, particularly in regard to its relation to a, to be plausible. His phonetic interpretation of OCS spellings is based on tacit assumptions I find difficult to reconstruct, apparently because he was striving for parallels with Baltic data which seem to me unwaranted.

142. The resulting disjunction between the stem *nes–uč–* (< *–antj-) and the N *nes–a* is clearly a complication of the declension. It may in fact have developed precisely when the old Nom was being relegated to purely adverbial function and the participial –*uč*– extended to build a new *nesuč(ь)*. The data are unfortunately inadequate to verify such a hypothesis.

143. The nominatives *kamy* 'stone' and *plamy* 'flame' imply *–an–X or *ān–X, while comparative data indicate rather *–ōn. It is reasonable to assume that the nominative *s of other types of masculines was added here in Pre–Slavic or Proto–Slavic, thus *kāmānX, *palmānX.

144. The addition of the desinence *–X in *kāmānX *plāmānX becomes unnecessary if we place VR¹ in the early period when vowels could still be distinctively rounded and therefore ð ≠ ā. VR¹ is reformulated to state *ð > *ū:

$$
\left[\begin{array}{c} V \\ +\text{round} \end{array} \right] \quad > \quad [+\text{high}] \quad / \underline{\hspace{1.5em}} \quad N\#
$$

Thus N *kāmōn > *kāmūn and A Sg *rodom > *rodum (cf. note 136 above), but Asg f *nogām remains; later the contrasts are *kāmȳ(N), *radȳ(N), and *nagāN, which yield OCS *kamy, rodъ* and *nogǫ*. If this is so, the desinence of 1 sg pres at the time must still have been *ð, so that, for example, *mog–ð would become *magā; the final nasal was added as a morphological innovation, later, possibly close to the historical period, and the resulting *magāN yielded *mogǫ*.

   VR² provides the machinery to account for the r–stem nominatives *mati* 'mother' and *dъšti* 'daughter'. We need only posit final *–ēr (parallel to Gk *mētēr* rather than to Skr .nātā): *mātēr > *mātīr > mati. Final *r can be assumed to be deleted by the same rule that deletes *X, *s, and *t.

   Note that neither Vowel–Raising rule affects *–en, so that *sēmen > *sēmeN > sěmę.

145. Confrontation of OCS *ist–es–* 'kidney, testicle' with Lith. *inkstas, and *lyko* 'bast' with Lith. *lùnkas* suggests that internal *īN and *ȳN also lost *N, but the meager data can be explained otherwise; cf. Vasmer s.v. *isto* II, and Vaillant 1958ª 235, Vasmer s.v. *lyko* and Vaillant 1950 145.

146 Perhaps no post–consonantal *j yet existed (see below), but in any case it does not seem necessary to specify /+syllabic/ in the rule.

147. In the absence of a convention expressing the notion *unless,* I will not attempt to formalize this rule.

148. The fact that in prehistoric Czech there was another change of back to front vowels after palatals must be kept strictly separate from this much older, Proto–Slavic or early Common Slavic, process. The fact that the glagolitic alphabet must render *kraja* as *krač* may possibly suggest that a similar process was contemporary to Cyril's dialect; I am more

inclined to see such spellings as the result of Cyril's failure to invent a symbol for iod. Sporadic чⲂ and шⲂ in OCS (excepting the Kiev Sac., cf. note 60) reflect incipient local innovations in east Balkan Slavic dialects.

149. One might invoke masc–neut *-ai, with further extension of the analogy to fem dative. The assumptions that D fem *-āi had circumflex intonation, but L *-āi had acute (e.g. Vaillant 1958ᵃ 81–2) and thus was opposed to L m *-ai with circumflex, would presumably not stand in the way of this analogy. (Incidentally, I take the terms *acute* and *circumflex* to have morphophonemic value for most of the long period from late Common Slavic back to Proto–Slavic or Pre–Slavic. They must refer not to phonetic details of surface syllables, but to the POTENTIAL behavior of syllabic morphemes when combined with other morphemes with specific accentual properties. At some point, *acute* doubtless meant 'prominence on the second mora (under specific environmental conditions)', while *circumflex* denoted 'prominence on the first mora (under specific conditions)'.

150. In the table on p. $\overline{17}$, I have written *-ai for DL sg of *awikā (and also for the NA dual, where Vaillant 1958ᵃ 85 is uncertain about the length) because that table was merely intended to illustrate that all desinences begin with a non-high vowel, without pretending to list the many controversies about other questions.

151. It is worth noting that the development of *j to */ after labial is typologically unusual. al. Aside from Slavic dialects, it apparently occurs only in Latvian. More usual is that a spirant develops, as in French *proche* < *propšǝ < *propius, rouge < *rubžǝ < *rubju < *rubeum,* or Greek dialect *karávýa/karávža* for *karávia* 'boats' or *kupxá* for *kupiá* 'oars' (Newton 1972b 170, 156). Palatalized labials also may develop strong spirant offglides that can become independent segments, as in Pol. dial. *pšasek, bžały* for *piasek* 'sand', *biały* 'white'.

152. The very old alternation of *u and *w remained active in the diphthong *ou, resulting in Slavic pre–vocalic /aw/ alternating with /au/ before consonant or word–boundary. Many morphemes, however, developed underlying /aw/. Before iod, the diphthong evolved to *ū, as in the possessive adj. *volujь < *wal–au–j–aX (cf. volъ 'ox') or the verbal formant *au followed by the present suffix *j, e.g. milujǫ 'I pity' < *mīl–au–j–āN (but inf. milovati < –au–ā–tei). The glide *w, however, remained before iod, and / could develop: lovl̦ǫ 'I hunt' (law–/), iakovl̦ь 'Jakob's' (from the borrowed /iākaw–/).

153. Vaillant 1950 66–7 needlessly posits initial gemination of all obstruents, e.g. *ttj, *kkj, *ssj, *ppj, thus apparently assuming expansion from two segments to three, then fusion of the last two. Observed languages make it more plausible that *j assimilated consonantantality, and then in later steps became more or less like the preceding consonant – or else induced changes in that consonant. The question of how Proto–Slavic *kt (or *tk) evolved into a sequence that produces dialect reflexes identical with those of *tj (e.g. *naktiX > OCS noštь, Cz noc, R noč, SC noć 'night'; *ŏt–ke > OCS ašte 'if', Meillet 95) will not be pursued here.

154. Note that West Slavic – at least if we generalize from Old Czech – also had *šč/*žǯ resulting from *sk/*zg by KAI: L sg dъščě, *měžǯě to *dъska 'board' and *mězga 'sap' (cf. Vaillant 1950 50–1). East and South Slavic had *šč/*žǯ from both *sk/*zg by KI and *stj/*zdj, but the reflexes of *sk/*zg by KAI did not develop š/ž. A full account of the history of Slavic consonantism must deal with all of these facts.

155. Let me again note that I have assumed throughout this study that the feature /distributed/ was nondistinctive for the dialects and periods under consideration, cf. note 80. However, in view of the fact that this feature is indispensable in describing Polish, with its

history and dialectology, it may well have been a vital factor at the time western Proto–Slavic or early Common Slavic dialects began to diverge significantly from their eastern and southern congeners. This is an important question that remains to be investigated.

East and South Slavic must have had for some time an independent /ś/ resulting from *x by KAI, although its functional load was small. Contrasts of the type si vs śi vs ši seem quite certain, e.g. in N pl m iskusi (iskusъ) vs. *duśi (duxъ) vs. Dl sg f duši (duša). This unit somehow developed in the pronouns *śь and *vьśь (cf. pp. 36f. above), but its independence was insufficient to require a special symbol in the new alphabets. For WS1, however, the reflex of *xai was *šě. This leaves only Old Czech masc–neut forms with front–vowel desinences (like seho, semu) that require motivation. Is one to posit /ś/ here, or admit some late interaction of alternate stem–forms to explain this pronoun?

At any rate, the *s/*z preceding a fronted *k/*g of any origin became /–anterior/ *š/ž in WS1 and remained so, while in the East and South they remained /+anterior/ in *sk/*zg during the KAI process. That Balkan Slavic *sć/*zȝ́ became *sc/*zȝ is reasonably clear, but the East Slavic developments are obscure. Early Rusian manuscripts ordinarily adhere to the doublet OCS spellings scě/stě, but examples with skě (e. g. ženъskě 1073) occur with such purposeful regularity in some manuscripts that we must recognize that the scribes did not consider the letters "т" or "ц" to be appropriate here. Such spellings perhaps indicate that KAI did not apply if the velar was preced-' ed by a fricative, but it is more likely that they denote a local *sk pronunciation (or *śk?) which in turn represents a recent dissimilation from older ść, as Šaxmatov suggested. In any case, resistance to KAI–based alternations in declensions was strong from very early, and we do not possess unambiguous evidence of how the process worked in different areas of Rus. Doubtless there was dialect variation. – Examples of N pl m *sk-aiX are rare, and overwhelmingly spelled sci/sti. In the earliest mss. there is a unique but highly significant exception, grěšьničьskí 1073. Examples in 12th-s. mss raise problems that cannot be dealt with here.

156. Mod. Pol. L sg w Polszcze is the sole residue of a series of examples indicating that Polish originally did go at least partially with Czech.

157. The movements of groups from one area of Slavdom to another in the historical period surely led to the loss of a number of idiosyncratic local dialects, and it is probable that prehistoric shifts of population (along with numerous other sociolingustic factors) countered various divergent developments in statu nascendi. We need more detailed studies of surviving contemporary mixed and transitional dialects to help establish typologies. An instructive case is the dialect of Dlhá Lúka in eastern Slovakia, where the Slovak elements have been significantly altered under the influence of neighboring Ukrainian dialects and the speech of Polish immigrants. There c/ȝ reflect the relatively modern palatalization of dentals before front vowels (ȝeci < děti) as well as the usual WS1 reflexes of *tj/*dj (cuȝi, cf. OCS *ščužȝь 'alien', R čužoj), and Common Slavic reflexes of BdC (e.g. ofca < ovьca, ocec 'father') and KAI (po ruce) but with complications introduced by loans from various sources and by the presence of ś/ź (probably /+distributed/) along with s/z and š/ž. See Buffa's monograph.

158. My speculations in this study have been based squarely on the assumption that changes like k > s or š necessarily entail intermediate stages (or at least one stage) with affricates, for this restriction is required by all the evidence I know from any language that has come to my attention. Yet the theoretical possibility of a direct shift from stop to fricative, say ć to x́ or š, is implicit in the framework. Should reliable documentation of such a change in any observed language become available, of course the Slavic data must again be examined in this new light.

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15, line 12	*ḱ*	*ć*
line 21	*e*	*l*
17, Table I. The three sets of forms should be labelled singular, dual, and plural		
17, Table I, Instrumental plural:	*sirdikaS	*sirdikāS
22, line 3 from bottom	*neseaše*	**nesěaše*
24, line 5	can assumed	can be assumed
27, lines 27–8	his-sing	hushing
28, line 1	and	and is
line 4	*milčāti*	*milčātī*
„	*mlьčāti*	*mlьčati*
line 28	*ǫ	*ǫ̆
32, line 8	form	from
33, line 3 from bottom	Polish.	Polish.[108]
34, lines 35-6	re-ach	reach
lines 36-7	so-me	some
47, line 15	*atrakěX.*	*atrakěXy.*
49, l. 7 from bottom, col 5	*awikaī	*awikāi
53, line 7	Novogorod	Nevgorod
54, line 13	OSC	OCS
57, n. 2, line 2	*č/*>	*č/ʒ*>
n. 3	sour-ce	source
58, line 6	Itis	It is
59, line 6	*svěka).*	*svěča.*
n. 12, line 2 from end	*–ys–*	*–yš–*
n. 13, line 2	same too	same time too
61, n. 22, line 4	**-an*	**-aN*
66, n. 49, line 3	JabWońska	Jabłońska
67, n. 58, line 3	m sg	m A sg
n. 59, line 5	p.	p. 17
68, n. 61, line 16	distinguist	distinguish
n. 61, line 3 from end	OSC	OCS
73, n. 82, line 20	*tsj)*	*tsj*
74, n. 88, line 2	centrury	century
75, n. 91, line 1	spelings	spellings
76, n. 96, line 2	place-name	place-names
77, n. 98, line 2	SWawski	Sławski
79, n. 110, line 1	cannon	canon
79, n. 111, line 3	l'elimination	l'élimination
82, n. 131, line 2	*kr̥m-*but **kr̥n-*	"hard"*kr̥m-* but "soft"**kr̥n-*
83, n. 136, l. 2 after formula	=	≠
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84, line 5	unwaranted	unwarranted
85, n. 151, line 2	al.	
n. 152, last line	(law-/)	(/law-/)
87, line 4	Changes	Changes in
90, line 7	*SWowian*	*Słowian*
line 20	1975	1974
93, s.v. Channon	29	27

In the index a number of words are two or three places out of strict
alphabetical order. Readers are asked to take this into account in
using the index.