# Universal Annotation of Slavic Verb Forms

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**Abstract**

This article proposes application of a subset of the Universal Dependencies (UD) standard to the group of Slavic languages. The subset in question comprises morphosyntactic features of various verb forms. We systematically document the inventory of features observable with Slavic verbs, giving numerous examples from 10 languages. We demonstrate that terminology in literature may differ, yet the substance remains the same. Our goal is practical. We definitely do not intend to overturn the many decades of research in Slavic comparative linguistics. Instead, we want to put the properties of Slavic verbs in the context of UD, and to propose a unified (Slavic-wide) application of UD features and values to them. We believe that our proposal is a compromise that could be accepted by corpus linguists working on all Slavic languages.

## 1. Introduction and related work

Universal Dependencies (Nivre et al., 2016)[1] is a project that seeks to design cross-linguistically consistent treebank annotation for as many languages as possible. Besides dependency relations, UD also defines universally applicable tags for parts of speech *(universal POS tags)* and common morphosyntactic features *(universal features)*. The features are taken from a previous project called Interset (Zeman, 2008).

Being suitable for a variety of unrelated languages means that the core concepts of UD must be sufficiently general; at the same time, their definitions must be descriptive enough to signal that two phenomena in two different languages are (or are not) the same thing, despite conflicts in traditional terminologies.

There is always the danger that researchers working on different languages will apply the UD concepts differently. As UD gains on popularity and new datasets are

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[1]`http://universaldependencies.org/`

converted to its annotation scheme, enforcing consistency is an increasingly important issue. It seems natural to start with looking at closely related languages and first make sure that they annotate the same things same way; then widen the view to larger language groups and so on.

The first work on Slavic-specific issues in UD was Zeman (2015). The present article focuses on part-of-speech tags and features of individual words, not on inter-word dependency relations. Some verb forms are analytical (periphrastic), made of two or more individual words. We occasionally use the periphrastic constructions for illustrative purposes but bear in mind that tags and features must be assigned to individual words only. Also note that UD postulates the concept of syntactic word, something that is not necessarily identical to the space-delimited orthographic word. An orthographic word may be understood as a fusion of two or more syntactically autonomous units; the annotation treats each of them separately.

Some work has been published that pre-dates UD and is related to our current effort. Besides Interset (Zeman, 2015), the outcomes of the MULTEXT-East project are highly relevant (Erjavec, 2012). Quite a few Slavic languages have morpho-syntactic tagsets stemming from MULTEXT-East. These tagsets are similar to each other and they were indeed intended to encode the same phenomena identically across languages. Unfortunatelly they have not always reached this goal. Traditional views and legacy resources sometimes outweighed the desire for uniformity. UD faces the same danger and we should strive hard to avoid it.

In the following sections we discuss UD tags and features applicable to Slavic verbs (as well as some words on the border between verbs and other parts of speech). We give numerous examples and inflection tables together with the proposed annotation.[2] We list the native names of the verb forms in the beginning of each section.

We use ISO 639 language codes when refering to individual languages: **[be]** Belarusian, **[bg]** Bulgarian, **[cs]** Czech, **[cu]** Old Church Slavonic, **[dsb]** Lower Sorbian, **[hr]** Croatian, **[hsb]** Upper Sorbian, **[mk]** Macedonian, **[pl]** Polish, **[ru]** Russian, **[sk]** Slovak, **[sl]** Slovenian, **[sr]** Serbian, **[uk]** Ukrainian.

Six Slavic languages ([bg], [cs], [cu], [hr], [pl] and [sl]) already have datasets in the current release of UD (1.2) and other languages are expected to get covered in the near future. We briefly summarize the approaches taken in the current data in Section 18.

## 2. Universal Features

The following universal features are discussed in the article. See the on-line documentation of UD (`http://universaldependencies.org/`) for their detailed description with examples. Here we provide just a list for quick reference:

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[2]The tables were compiled using on-line resources such as Wictionary, verb conjugators and language courses, as well as printed grammars and dictionaries. We do not cite these sources individually due to space considerations.

- Aspect: `Imp` (imperfective), `Perf` (perfective)
- VerbForm: `Fin` (finite verb), `Inf` (infinitive), `Sup` (supine), `Part` (participle), `Trans` (transgressive)
- Mood: `Ind` (indicative), `Imp` (imperative), `Cnd` (conditional)
- Tense: `Past` (past), `Imp` (imperfect), `Pres` (present), `Fut` (future)
- Voice: `Act` (active), `Pass` (passive)
- Number: `Sing` (singular), `Dual` (dual), `Plur` (plural)
- Person: `1`, `2`, `3`
- Gender: `Masc` (masculine), `Fem` (feminine), `Neut` (neuter)
- Animacy: `Anim` (animate/human), `Nhum` (animate nonhuman), `Inan` (inanimate)
- Case: `Nom` (nominative), `Gen` (genitive), `Dat` (dative), `Acc` (accusative), `Voc` (vocative), `Loc` (locative), `Ins` (instrumental)
- Definite: `Ind` (indefinite), `Def` (definite)
- Negative: `Pos` (affirmative), `Neg` (negative)

## 3. Universal Part of Speech Tag and Lemma

We discuss various finite and non-finite forms of verbs in Slavic languages. We include some forms on the border of verbs and other parts of speech because we want to define the borderline between parts of speech uniformly for all Slavic languages.

We propose a simple (but approximate!) rule of thumb: if it inflects for `Case`, it is not a `VERB`. It is either an `ADJ`, or a `NOUN`. We treat such forms as adjectives or nouns derived from verbs. Nevertheless, they may have some features such as `VerbForm` and `Tense` that are normally used with verbs and that do not occur with other adjectives and nouns.

Verbal nouns have the neuter gender and they are rarely seen in plural.

Participles may, depending on language, have short and long forms. The long forms almost always inflect for `Case` and can be used attributively (as modifiers of nouns). We propose to classify them as adjectives. The short forms of some participle types receive the `VERB` tag: it signals that their inflection is limited[3] and their usage is prevailingly predicative. In south Slavic languages even some short participles inflect for `Case`[4] and get the `ADJ` tag; the short vs. long forms differ in the feature of `Definite`(ness) there.

Only a few Slavic verbs may function as auxiliaries and be tagged `AUX`. All of them may also be tagged `VERB` in other contexts. The main auxiliary verb is *to be (být, bývat, byť, być, бути, быть, biti…)* It may be used to form the future tense, past tense, conditional and passive. Serbo-Croatian languages use a different auxiliary verb, *htjeti*

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[3]A rare example of short form inflection in Czech is the feminine accusative, e.g. *udělánu*.

[4]Actually only a few forms—masculine singular nominative and masculine inanimate singular accusative—distinguish "long" vs. "short" forms in [sl] and [hr]. In the other cases there is just one form and it does not make much sense to classify it as either long or short.

"will", to form the future tense. We do not see any benefit in granting the auxiliary status to verbs that are not needed in periphrastic verb forms; in particular, modal verbs are tagged VERB, although UD for Germanic languages treats them as auxiliaries. In accord with the UD guidelines, the verb *to be* is tagged VERB if it functions as copula.

All words tagged VERB or AUX must have a non-empty value of the feature VerbForm.

The POS tag also determines what word form will be used as the lemma. For VERB and AUX, the lemma is the infinitive (Section 5),[5] except for [bg] and [mk]: these languages do not have infinitives, and present indicative forms are used as lemmas there. However, if the word is tagged ADJ, the masculine singular nominative form of the adjective serves as the lemma. The annotation does not show the infinitive of the base verb (except for an optional reference in the MISC column). Similarly, the lemma of a verbal NOUN is its singular nominative form.

## 4. Aspect

Slavic languages distinguish two aspects: imperfective (Aspect=Imp) and perfective (Aspect=Perf). The feature is considered lexical, that is, all forms of one lemma (usually) belong to the same aspect. A few verbs (many of them loanwords from non-Slavic languages) work with both aspects. We omit the Aspect feature at these verbs. Most Slavic verbs are part of inflected aspect pairs where one verb is imperfective and the other is perfective. They have different lemmas and the morphological processes that create one from the other are considered derivational. Examples (Imp – Perf): [cs] *dělat – udělat* "to do", *sedět – sednout* "to sit", *kupovat – koupit* "to buy", *brát – vzít* "to take". Although the meaning of the two verbs is similar, in perfective verbs the action is completed and in imperfective verbs it is ongoing.

The equivalents of the verb *to be* are imperfective.

## 5. Infinitive and Supine

[cs] *infinitiv, neurčitek*; [sk] *infinitív, neurčitok*; [hsb] *infinitiw*; [pl] *bezokolicznik*; [uk] *інфінітив*; [ru] *инфинитив*; [sl] *nedoločnik* (Inf), *namenilnik* (Sup); [hr] *infinitiv*. Tables 1 and 2.

Most Slavic languages have a distinct infinitive form, which is used as argument of modal and other verbs (control, purpose), and sometimes in construction of the periphrastic future tense. The infinitive is also used as the citation form of verbs. It does not exist in Macedonian and Bulgarian.

Czech has two forms of infinitive, e.g. *dělat* and *dělati* "to do". The longer form with the final *-i* is considered archaic, otherwise they are grammatically equivalent.

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[5]We do not prescribe whether inherently reflexive verbs such as [cs] *smát se* "to laugh" should or should not have the reflexive pronoun incorporated in their lemma.

| en | *to be* | *can* | *to go* | *to do* | *to accept* |
|----|---------|-------|---------|---------|-------------|
| cs | *být, býti* | *moct, moci* | *jít, jíti* | *dělat, dělati* | *akceptovat, akceptovati* |
| sk | *byť* | *môcť* | *ísť* | *robiť* | *akceptovať* |
| hsb | *być* | *móc* | *hić* | *dźěłać* | *akceptować* |
| pl | *być* | *móc* | *iść* | *robić* | *akceptować* |
| uk | *бути* *buty* | *могти* *mohty* | *йти* *jty* | *робити* *robyty* | *акцептувати* *akceptuvaty* |
| ru | *быть* *byt'* | *мочь* *moč'* | *идти* *idti* | *делать* *delat'* | *акцептовать* *akceptovat'* |
| sl | *biti* | *moči* | *iti* | *delati* | *akceptirati* |
| hr | *biti* | *moći* | *ići* | *delati, delat* | *akceptirati, akceptirat* |
| cu | бытн *byti* | моцін *mošti* | нтн *iti* | дѣлатн *dělati* | |

*Table 1. VerbForm=Inf*

| en | *to be* | *can* | *to go* | *to do* | *to accept* |
|----|---------|-------|---------|---------|-------------|
| sl | *bit* | | *it* | *delat* | *akceptirat* |
| cu | бытъ *bytъ* | | нтъ *itъ* | дѣлатъ *dělatъ* | |

*Table 2. VerbForm=Sup*

In contrast, Slovenian uses only the longer form *(delati)* as infinitive, while the shorter form is called supine and is used after motion verbs (meaning "to go somewhere to do something").[6] In Croatian both are considered infinitive but the short form is only used in future tense if the infinitive precedes the auxiliary verb: ***Učit*** *ću hrvatski.* "I will learn Croatian." but *Hoću **učiti** hrvatski.*

Infinitive and supine verbs lack most other verbal features, they only have non-empty values of Aspect, VerbForm and in some languages also of Negative.

## 6. Present and Future Indicative

[cs] *přítomný čas (prézens), budoucí čas (futurum)*; [sk] *prítomný čas, budúci čas*; [hsb] *prezens, futur*; [pl] *czas teraźniejszy, czas przyszły*; [uk] *теперішній час, майбутній час*;

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[6]The supine is an old form, attested in Old Church Slavonic. Besides Slovenian, it has also survived in Lower Sorbian.

| Number | Sing | | | Dual | | | Plur | | |
|--------|------|------|------|------|------|------|------|------|------|
| Person | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| cs | *jsem* | *jsi* | *je* | | | | *jsme* | *jste* | *jsou* |
| sk | *som* | *si* | *je* | | | | *sme* | *ste* | *sú* |
| hsb | *sym* | *sy* | *je* | *smój* | *staj* | *staj* | *smy* | *sće* | *su* |
| pl | *jestem* | *jesteś* | *jest* | | | | *jesteśmy* | *jesteście* | *są* |
| uk | є *je* | єси, є *jesy, je* | є *je* | | | | є *je* | є *je* | є *je* |
| ru | | | есть *est'* | | | | | | суть *sut'* |
| sl | *sem* | *si* | *je* | *sva* | *sta* | *sta* | *smo* | *ste* | *so* |
| hr | *jesam* *sam* | *jesi* *si* | *jest* *je* | | | | *jesmo* *smo* | *jeste* *ste* | *jesu* *su* |
| bg | *съм* *săm* | *си* *si* | *е* *e* | | | | *сме* *sme* | *сте* *ste* | *са* *sa* |
| cu | ЕСМЬ *jesmь* | ЕСИ *jesi* | ЕСТЪ *jestъ* | ЕСВѢ *jesvě* | ЕСТА *jesta* | ЕСТЕ *jeste* | ЕСМЪ *jesmъ* | ЕСТЕ *jeste* | СѪТЪ *sǫtъ* |

*Table 3. To be,* `VerbForm=Fin | Mood=Ind | Tense=Pres`*. Note that in Ukrainian and Russian the original non-3rd person forms of this verb have become archaic.*

[ru] *настоящее время, будущее время*; [sl] *sedanjik, prihodnjik*; [hr] *sadašnje vrijeme, buduće vrijeme*; [bg] *сегашно време, бъдеще време*. Tables 3–15.

Present tense is a simple finite verb form that marks person and number of the subject. Present forms of perfective verbs have a future meaning; however, we prefer morphology (form) to semantics (function) and annotate them `Tense=Pres`, regardless the aspect and meaning.[7]

Future tense of imperfective verbs is usually formed periphrastically, using infinitive or participle of the content verb, and special forms of the auxiliary verb *to be*, e.g. [cs] *budu dělat* "I will do". These special forms are different from the present forms and they are annotated `Tense=Fut`. The infinitive of the content verb does not have the tense feature.

In Croatian, the periphrastic future is formed using another auxiliary verb, *htjeti* "will / want". This verb can also be used as a content (non-auxiliary) verb, and its auxiliary forms are not different from its normal present forms. Therefore they will be annotated `Tense=Pres`.

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[7]Some tagsets prefer to call these forms *non-past verb*, cf. Przepiórkowski and Woliński (2003).

| Nu | Sing | | | Dual | | | Plur | | |
|----|------|------|------|------|------|------|------|------|------|
| Pe | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| cs | *budu* | *budeš* | *bude* | | | | *budeme* | *budete* | *budou* |
| sk | *budem* | *budeš* | *bude* | | | | *budeme* | *budete* | *budú* |
| hsb | *budu* | *budźeš* | *budźe* | *budźemoj* | *budźetej* | *budźetej* | *budźemy* | *budźeće* | *budu* |
| pl | *będę* | *będziesz* | *będzie* | | | | *będziemy* | *będziecie* | *będą* |
| uk | *буду* <br> *budu* | *будеш* <br> *budeš* | *буде* <br> *bude* | | | | *будемо* <br> *budemo* | *будете* <br> *budete* | *будуть* <br> *budut'* |
| ru | *буду* <br> *budu* | *будешь* <br> *budeš'* | *будет* <br> *budet* | | | | *будем* <br> *budem* | *будете* <br> *budete* | *будут* <br> *budut* |
| sl | *bom* | *boš* | *bo* | *bova* | *bosta* | *bosta* | *bomo* | *boste* | *bodo* |
| cu | БѪДѪ <br> *bǫdǫ* | БѪДЕШИ <br> *bǫdeši* | БѪДЕТЪ <br> *bǫdetъ* | БѪДЕВѢ <br> *bǫdevě* | БѪДЕТА <br> *bǫdeta* | БѪДЕТЕ <br> *bǫdete* | БѪДЕМЪ <br> *bǫdemъ* | БѪДЕТЕ <br> *bǫdete* | БѪДѪТЪ <br> *bǫdǫtъ* |

*Table 4. To be, VerbForm=Fin | Mood=Ind | Tense=Fut.*

A handful of Czech, Slovak and Slovenian motion verbs also have simple future forms, created by the prefix *p[oóôů]-*: [cs] *půjde* "he will go", *pojede* "he will ride", *poletí* "he will fly" but also *pokvete* "it will bloom". In these cases the prefix is not derivational because it does not create a new perfective lemma with a full paradigm. Thus we annotate these forms as future so they are distinguished from the present forms. In other languages the situation may be different. Russian *пойти (pojti)* is a full perfective counterpart of the imperfective *идти (idti)* and its present forms are annotated Tense=Pres.

Ukrainian is special in that it has regular simple future forms of imperfective verbs (not restricted to motion verbs). The periphrastic future also exists.

| Number | Sing | | | Dual | | | |
|--------|------|------|------|------|------|------|---|
| Person | 1 | 2 | 3 | 1 | 2 | 3 | |
| cs | *půjdu* | *půjdeš* | *půjde* | | | | |
| sk | *pôjdem* | *pôjdeš* | *pôjde* | | | | |
| hsb | *póńdu* | *póńdźeš* | *póńdźe* | *póńdźemoj* | *póńdźetej* | *póńdźetej* | ... |
| sl | *pojdem* | *pojdeš* | *pojde* | *pojdeva* | *pojdeta* | *pojdeta* | |
| uk | *ŭтиму* *jtymu* | *ŭтимеш* *jtymeš* | *ŭтиме* *jtyme* | | | | |

| Number | Plur | | | |
|--------|------|------|------|---|
| Person | 1 | 2 | 3 | |
| ... cs | *půjdeme* | *půjdete* | *půjdou* | |
| sk | *pôjdeme* | *pôjdete* | *pôjdu* | |
| hsb | *póńdźemy* | *póńdźeće* | *póńdu* | |
| sl | *pojdemo* | *pojdete* | *pojdejo* | |
| uk | *ŭтимемо* *jtymemo* | *ŭтимете* *jtymete* | *ŭтимуть* *jtymut'* | |

*Table 5. To go, VerbForm=Fin | Mood=Ind | Tense=Fut.*

| Number | Person | be | can | go | do | accept |
|--------|--------|------|------|------|------|--------|
| Sing | 1 | *jsem* | *můžu, mohu* | *jdu* | *dělám* | *akceptuji* |
| Sing | 2 | *jsi* | *můžeš* | *jdeš* | *děláš* | *akceptuješ* |
| Sing | 3 | *je* | *může* | *jde* | *dělá* | *akceptuje* |
| Plur | 1 | *jsme* | *můžeme* | *jdeme* | *děláme* | *akceptujeme* |
| Plur | 2 | *jste* | *můžete* | *jdete* | *děláte* | *akceptujete* |
| Plur | 3 | *jsou* | *můžou, mohou* | *jdou* | *dělají* | *akceptují* |

*Table 6. [cs] VerbForm=Fin | Mood=Ind | Tense=Pres*

| Number | Person | be | can | go | do | accept |
|--------|--------|-----|-------|-------|-------|------------|
| Sing | 1 | *som* | *môžem* | *idu* | *robím* | *akceptujem* |
| Sing | 2 | *si* | *môžeš* | *ideš* | *robíš* | *akceptuješ* |
| Sing | 3 | *je* | *môže* | *ide* | *robí* | *akceptuje* |
| Plur | 1 | *sme* | *môžeme* | *ideme* | *robíme* | *akceptujeme* |
| Plur | 2 | *ste* | *môžete* | *idete* | *robíte* | *akceptujete* |
| Plur | 3 | *sú* | *môžu* | *idú* | *robia* | *akceptujú* |

*Table 7. [sk] VerbForm=Fin | Mood=Ind | Tense=Pres*

| Number | Person | be | can | go | do | accept |
|--------|--------|-------|--------------|------------|----------|---------------|
| Sing | 1 | *sym* | *móžu* | *du* | *dźěłam* | *akceptuju* |
| Sing | 2 | *sy* | *móžeš* | *dźeš* | *dźěłaš* | *akceptuješ* |
| Sing | 3 | *je* | *móže* | *dźe* | *dźěła* | *akceptuje* |
| Dual | 1 | *smój* | *móžemoj* | *dźemoj* | *dźěłamoj* | *akceptujemoj* |
| Dual | 2 | *staj* | *móžetej* | *dźetej* | *dźěłatej* | *akceptujetej* |
| Dual | 3 | *staj* | *móžetej* | *dźetej* | *dźěłatej* | *akceptujetej* |
| Plur | 1 | *smy* | *móžemy* | *dźemy* | *dźěłamy* | *akceptujemy* |
| Plur | 2 | *sće* | *móžeće* | *dźeće* | *dźěłaće* | *akceptujeće* |
| Plur | 3 | *su* | *móža, móžeja* | *du, dźeja* | *dźěłaja* | *akceptuja* |

*Table 8. [hsb] VerbForm=Fin | Mood=Ind | Tense=Pres*

| Number | Person | be | can | go | do | accept |
|--------|--------|-----------|----------|-----------|----------|---------------|
| Sing | 1 | *jestem* | *mogę* | *idę* | *robię* | *akceptuję* |
| Sing | 2 | *jesteś* | *możesz* | *idziesz* | *robisz* | *akceptujesz* |
| Sing | 3 | *jest* | *może* | *idzie* | *robi* | *akceptuje* |
| Plur | 1 | *jesteśmy* | *możemy* | *idziemy* | *robimy* | *akceptujemy* |
| Plur | 2 | *jesteście* | *możecie* | *idziecie* | *robicie* | *akceptujecie* |
| Plur | 3 | *są* | *mogą* | *idą* | *robią* | *akceptują* |

*Table 9. [pl] VerbForm=Fin | Mood=Ind | Tense=Pres*

| Number | Person | be | can | go | do | accept |
|--------|--------|-----|------|-----|------|--------|
| Sing | 1 | *є*<br>*je* | *можу*<br>*možu* | *йду*<br>*jdu* | *роблю*<br>*roblju* | *акцептую*<br>*akceptuju* |
| Sing | 2 | *єси, є*<br>*jesy, je* | *можеш*<br>*možeš* | *йдеш*<br>*jdeš* | *робиш*<br>*robyš* | *акцептуєш*<br>*akceptuješ* |
| Sing | 3 | *є*<br>*je* | *може*<br>*može* | *йде*<br>*jde* | *робить*<br>*robyt'* | *акцептує*<br>*akceptuje* |
| Plur | 1 | *є*<br>*je* | *можемо*<br>*možemo* | *йдемо, йдем*<br>*jdemo, jdem* | *робимо, робим*<br>*robymo, robym* | *акцептуємо*<br>*akceptujemo* |
| Plur | 2 | *є*<br>*je* | *можете*<br>*možete* | *йдете*<br>*jdete* | *робите*<br>*robyte* | *акцептуєте*<br>*akceptujete* |
| Plur | 3 | *є*<br>*je* | *можуть*<br>*možut'* | *йдуть*<br>*jdut'* | *роблять*<br>*robljat'* | *акцептують*<br>*akceptujut'* |

*Table 10. [uk] VerbForm=Fin | Mood=Ind | Tense=Pres*

| Number | Person | be | can | go | do | accept |
|--------|--------|-----|------|-----|------|--------|
| Sing | 1 | | *могу*<br>*mogu* | *иду*<br>*idu* | *делаю*<br>*delaju* | *акцептую*<br>*akceptuju* |
| Sing | 2 | | *можешь*<br>*možeš'* | *идёшь*<br>*idëš'* | *делаешь*<br>*delaeš'* | *акцептуешь*<br>*akceptueš'* |
| Sing | 3 | *есть*<br>*est'* | *может*<br>*možet* | *идёт*<br>*idët* | *делает*<br>*delaet* | *акцептует*<br>*akceptuet* |
| Plur | 1 | | *можем*<br>*možem* | *идём*<br>*idëm* | *делаем*<br>*delaem* | *акцептуем*<br>*akceptuem* |
| Plur | 2 | | *можете*<br>*možete* | *идёте*<br>*idëte* | *делаете*<br>*delaete* | *акцептуете*<br>*akceptuete* |
| Plur | 3 | *суть*<br>*sut'* | *могут*<br>*mogut* | *идут*<br>*idut* | *делают*<br>*delajut* | *акцептуют*<br>*akceptujut* |

*Table 11. [ru] VerbForm=Fin | Mood=Ind | Tense=Pres*

| Number | Person | be | can | go | do | accept |
|--------|--------|------|--------|------------|---------|-------------|
| Sing | 1 | *sem* | *morem* | *grem* | *delam* | *akceptiram* |
| Sing | 2 | *si* | *moreš* | *greš* | *delaš* | *akceptiraš* |
| Sing | 3 | *je* | *more* | *gre* | *dela* | *akceptira* |
| Dual | 1 | *sva* | *moreva* | *greva* | *delava* | *akceptirava* |
| Dual | 2 | *sta* | *moreta* | *gresta* | *delata* | *akceptirata* |
| Dual | 3 | *sta* | *moreta* | *gresta* | *delata* | *akceptirata* |
| Plur | 1 | *smo* | *moremo* | *gremo* | *delamo* | *akceptiramo* |
| Plur | 2 | *ste* | *morete* | *greste* | *delate* | *akceptirate* |
| Plur | 3 | *so* | *morejo* | *gredo, grejo* | *delajo* | *akceptirajo* |

*Table 12. [sl] VerbForm=Fin | Mood=Ind | Tense=Pres*

| Number | Person | be | can | go | do | accept |
|--------|--------|-------------|------------------|-----------------|-----------------|------------------------|
| Sing | 1 | *със*<br>*săm* | *мога*<br>*moga* | *отивам*<br>*otivam* | *правя*<br>*pravja* | *акцептирам*<br>*akceptiram* |
| Sing | 2 | *си*<br>*si* | *можеш*<br>*možeš* | *отиваш*<br>*otivaš* | *правиш*<br>*praviš* | *акцептираш*<br>*akceptiraš* |
| Sing | 3 | *е*<br>*e* | *може*<br>*može* | *отива*<br>*otiva* | *прави*<br>*pravi* | *акцептира*<br>*akceptira* |
| Plur | 1 | *сме*<br>*sme* | *можем*<br>*možem* | *отиваме*<br>*otivame* | *правим*<br>*pravim* | *акцептираме*<br>*akceptirame* |
| Plur | 2 | *сте*<br>*ste* | *можете*<br>*možete* | *отивате*<br>*otivate* | *правите*<br>*pravite* | *акцептирате*<br>*akceptirate* |
| Plur | 3 | *са*<br>*sa* | *могат*<br>*mogat* | *отиват*<br>*otivat* | *правят*<br>*pravjat* | *акцептират*<br>*akceptirat* |

*Table 13. [bg] VerbForm=Fin | Mood=Ind | Tense=Pres*

| Number | Person | be | can | go | do | accept |
|--------|--------|-----|-----|-----|-----|--------|
| Sing | 1 | *jesam, sam* | *mogu* | *idem* | *delam* | *akceptiram* |
| Sing | 2 | *jesi, si* | *možeš* | *ideš* | *delaš* | *akceptiraš* |
| Sing | 3 | *jest, je* | *može* | *ide* | *dela* | *akceptira* |
| Plur | 1 | *jesmo, smo* | *možemo* | *idemo* | *delamo* | *akceptiramo* |
| Plur | 2 | *jeste, ste* | *možete* | *idete* | *delate* | *akceptirate* |
| Plur | 3 | *jesu, su* | *mogu* | *idu* | *delaju* | *akceptiraju* |

*Table 14. [hr] VerbForm=Fin | Mood=Ind | Tense=Pres*

| Number | Person | be | can | go | do |
|--------|--------|-----|-----|-----|-----|
| Sing | 1 | ЕСМЬ<br>*jestь* | МОГѪ<br>*mogǫ* | НѪ, ιѪ<br>*idǫ* | ДѢЛАІѪ<br>*dělajǫ* |
| Sing | 2 | ЕСН<br>*jesi* | МОЖЕШН<br>*možeši* | НѦЕШН, ιѦЕШН<br>*ideši* | ДѢЛАЕШН<br>*dělaješi* |
| Sing | 3 | ЕСТЪ<br>*jestъ* | МОЖЕТЪ<br>*možetъ* | НѦЕТЪ, ιѦЕТЪ<br>*idetъ* | ДѢЛААТЪ<br>*dělaatъ* |
| Dual | 1 | ЕСВѢ<br>*jesvě* | МОЖЕВѢ<br>*moževě* | НѦЕВѢ, ιѦЕВѢ<br>*idevě* | ДѢЛАЕВѢ<br>*dělajevě* |
| Dual | 2 | ЕСТА<br>*jesta* | МОЖЕТА<br>*možeta* | НѦЕТА, ιѦЕТА<br>*ideta* | ДѢЛАЕТА<br>*dělajeta* |
| Dual | 3 | ЕСТЕ<br>*jeste* | МОЖЕТЕ<br>*možete* | НѦЕТЕ, ιѦЕТЕ<br>*idete* | ДѢЛАЕТЕ<br>*dělajete* |
| Plur | 1 | ЕСМЪ<br>*jestъ* | МОЖЕМЪ<br>*možetъ* | НѦЕМЪ, ιѦЕМЪ<br>*idetъ* | ДѢЛАЕМЪ<br>*dělajetъ* |
| Plur | 2 | ЕСТЕ<br>*jeste* | МОЖЕТЕ<br>*možete* | НѦЕТЕ, ιѦЕТЕ<br>*idete* | ДѢЛАЕТЕ<br>*dělajete* |
| Plur | 3 | СѪТЪ<br>*sǫtъ* | МОГѪТЪ<br>*mogǫtъ* | НѪТЪ, ιѪТЪ<br>*idǫtъ* | ДѢЛАІѪТЪ<br>*dělajǫtъ* |

*Table 15. [cu] VerbForm=Fin | Mood=Ind | Tense=Pres*

## 7. Imperative

[cs] *rozkazovací způsob (imperativ);* [sk] *imperatív (rozkazovací spôsob);* [hsb] *imperatiw;* [pl] *tryb rozkazujący;* [uk] *наказовий спосіб;* [ru] *повелительное наклонение;* [sl] *velelnik, velelni naklon;* [hr] *imperativ;* [bg] *повелително наклонение (императив).* Tables 16–25.

Imperative is a simple finite verb form that marks person and number but it does not mark tense (we leave the Tense feature empty). Imperative forms are not available in the 3rd person (appeals to third persons may be formed periphrastically, using particles and present indicative forms; these are not annotated as imperatives). Imperative also does not exist in the 1st person singular. Modal verbs usually do not have imperatives.

| Number | Person | be | go | do | accept |
|--------|--------|-----|------------|--------|------------|
| Sing | 2 | *buď* | *jdi, pojď* | *dělej* | *akceptuj* |
| Plur | 1 | *buďme* | *jděme, pojďme* | *dělejme* | *akceptujme* |
| Plur | 2 | *buďte* | *jděte, pojďte* | *dělejte* | *akceptujte* |

*Table 16. [cs] VerbForm=Fin | Mood=Imp*

| Number | Person | be | go | do | accept |
|--------|--------|-----|--------|--------|------------|
| Sing | 2 | *buď* | *choď* | *rob* | *akceptuj* |
| Plur | 1 | *buďme* | *choďme* | *robme* | *akceptujme* |
| Plur | 2 | *buďte* | *choďte* | *robte* | *akceptujte* |

*Table 17. [sk] VerbForm=Fin | Mood=Imp*

| Number | Person | be | go | do | accept |
|--------|--------|-----------|-------------------|-----------|-------------|
| Sing | 2 | *budź* | *dźi, pońdź* | *dźěłaj* | *akceptuj* |
| Dual | 1 | *budźmoj* | *dźemoj, pońdźmoj* | *dźěłajmoj* | *akceptujmoj* |
| Dual | 2 | *budźtej* | *dźetej, pońdźtej* | *dźěłajtej* | *akceptujtej* |
| Plur | 1 | *budźmy* | *dźemy, pońdźmy* | *dźěłajmy* | *akceptujmy* |
| Plur | 2 | *budźće* | *dźeće, pońdźće* | *dźěłajće* | *akceptujće* |

*Table 18. [hsb] VerbForm=Fin | Mood=Imp*

| Number | Person | be | go | do | accept |
|--------|--------|-----|-----|-----|---------|
| Sing | 2 | *bądź* | *idź* | *rób* | *akceptuj* |
| Plur | 1 | *bądźmy* | *idźmy* | *róbmy* | *akceptujmy* |
| Plur | 2 | *bądźcie* | *idźcie* | *róbcie* | *akceptujcie* |

*Table 19. [pl] VerbForm=Fin | Mood=Imp*

| Number | Person | be | go | do | accept |
|--------|--------|-----|-----|-----|---------|
| Sing | 2 | *будь* <br> *bud'* | *йди* <br> *jdy* | *роби* <br> *roby* | *акцептуй* <br> *akceptuj* |
| Plur | 1 | *будьмо* <br> *bud'mo* | *йдімо, йдім* <br> *jdimo, jdim* | *робімо, робім* <br> *robimo, robim* | *акцептуймо* <br> *akceptujmo* |
| Plur | 2 | *будьте* <br> *bud'te* | *йдіть* <br> *jdit'* | *робіть* <br> *robit'* | *акцептуйте* <br> *akceptujte* |

*Table 20. [uk] VerbForm=Fin | Mood=Imp*

| Number | Person | be | go | do | accept |
|--------|--------|-----|-----|-----|---------|
| Sing | 2 | *будь* <br> *bud'* | *иди* <br> *idi* | *делай* <br> *delaj* | *акцептуй* <br> *akceptuj* |
| Plur | 1 | *будемте* <br> *budemte* | *идёмте* <br> *idëmte* | *делаемте* <br> *delaemte* | *акцептуемте* <br> *akceptuemte* |
| Plur | 2 | *будьте* <br> *bud'te* | *идите* <br> *idite* | *делайте* <br> *delajte* | *акцептуйте* <br> *akceptujte* |

*Table 21. [ru] VerbForm=Fin | Mood=Imp*

| Number | Person | be | go | do | accept |
|--------|--------|------|--------|--------|-------------|
| Sing | 2 | *bodi* | *pojdi* | *delaj* | *akceptiraj* |
| Dual | 1 | *bodiva* | *pojdiva* | *delajva* | *akceptirajva* |
| Dual | 2 | *bodita* | *pojdita* | *delajta* | *akceptirajta* |
| Plur | 1 | *bodimo* | *pojdimo* | *delajmo* | *akceptirajmo* |
| Plur | 2 | *bodite* | *pojdite* | *delajte* | *akceptirajte* |

*Table 22. [sl] VerbForm=Fin | Mood=Imp*

| Number | Person | be | go | do | accept |
|--------|--------|--------|-------|---------|--------------|
| Sing | 2 | *budi* | *idi* | *delaj* | *akceptiraj* |
| Plur | 1 | *budimo* | *idimo* | *delajmo* | *akceptirajmo* |
| Plur | 2 | *budite* | *idite* | *delajte* | *akceptirajte* |

*Table 23. [hr] VerbForm=Fin | Mood=Imp*

| Number | Person | be | go | do | accept |
|--------|--------|------|-------|-------|-------------|
| Sing | 2 | *бъди* <br> *bădi* | *отивай* <br> *otivaj* | *прави* <br> *pravi* | *акцептирай* <br> *akceptiraj* |
| Plur | 2 | *бъдете* <br> *bădete* | *отивайте* <br> *otivajte* | *правете* <br> *pravete* | *акцептирайте* <br> *akceptirajte* |

*Table 24. [bg] VerbForm=Fin | Mood=Imp*

| Number | Person | be | go | do |
|--------|--------|-----------|--------------|-----------|
| Sing | 2 | бѫди <br> *bǫdi* | нди, ıди <br> *idi* | дѣлаи <br> *dělai* |
| Dual | 2 | бѫдѣта <br> *bǫděta* | ндѣта, ıдѣта <br> *iděta* | дѣлаита <br> *dělaita* |
| Plur | 2 | бѫдѣте <br> *bǫděte* | ндѣте, ıдѣте <br> *iděte* | дѣлаите <br> *dělaite* |

*Table 25. [cu] VerbForm=Fin | Mood=Imp*

## 8. Aorist Indicative

[cs] *aorist;* [hsb] *preteritum;* [hr] *aorist (pređašnje svršeno vreme);* [bg] *минало свършено време.* Tables 26, 32, 28 and 30.

Aorist is the old Slavic simple past tense. It is a finite form that marks person and number of the subject. It existed in the Old Church Slavonic language and it has survived in several languages until today; however, many languages have replaced it by the l-participle. For example, aorist is attested in Old Czech but it vanished during the 15th century.

Aorist is regularly used (together with imperfect, see Section 9) in Bulgarian and Macedonian. It is still understood in Serbian and Croatian, albeit its usage is limited. Aorist has also survived in the Sorbian languages, where it has effectively merged with imperfect into one simple past called preterite. Unlike in Bulgarian, in Sorbian the forms stemming from aorist are only found with perfective verbs, and the historical forms of imperfect only with imperfective verbs[8] (Breu, 2000). Hence we have just two inflection patterns, instead of two different tenses.

We can use the simple `Tense=Past` feature to annotate aorist in Slavic languages as it does not collide with the other past forms. This has been the original intention in Interset and in Universal Dependencies and it is used currently both in the Old Church Slavonic and the Bulgarian data. On the other hand, UD Ancient Greek uses a language-specific value `Tense=Aor`; if the future versions of the *universal* guidelines adopt this value, it might be more appropriate to use it.

The Sorbian preterite will be also tagged `Tense=Past`, regardless whether the verb is perfective or imperfective.

## 9. Imperfect Indicative

[cs] *imperfektum;* [hr] *imperfekat (pređašnje nesvršeno vreme);* [bg] *минало несвършено време.* Tables 27, 29 and 31.

Imperfect is another simple past tense that only survived in a few languages. It does not have any equivalent in English, but there are imperfect tenses in Romance languages.

For the merged aorist-imperfect (preterite) in Sorbian languages, see Section 8.

Verbs in imperfect describe states or actions that were happening during some past moment. They may or may not continue at and after the moment of speaking. Important is the past context and the relation of the action (state) to some other action (state) happening in the past.

Despite the name, both imperfective and perfective verbs can be used in the imperfect tense! Perfective verbs in the imperfect tense denote actions that were repeated in

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[8]It could be argued that the Sorbian usage is prototypical, while the imperfect tense of perfective verbs in Bulgarian is marked. Nevertheless, such change of perspective would have no impact on our proposed analysis.

| Number | Person | be | can | go | do | accept |
|--------|--------|------|--------|------|--------|---------|
| Sing | 1 | *bych* | *možech* | *jid* | *dělach* | *přijiech* |
| Sing | 2 | *by* | *može* | *jide* | *děla* | *přijie* |
| Sing | 3 | *by* | *može* | *jide* | *děla* | *přijie* |
| Dual | 1 | *bychově* | *možechově* | *jidově* | *dělachově* | *přijiechově* |
| Dual | 2 | *bysta* | *možesta* | *jideta* | *dělasta* | *přijiesta* |
| Dual | 3 | *bysta* | *možesta* | *jideta* | *dělasta* | *přijiesta* |
| Plur | 1 | *bychom* | *možechom* | *jidom* | *dělachom* | *přijiechom* |
| Plur | 2 | *byste* | *možeste* | *jidete* | *dělaste* | *přijieste* |
| Plur | 3 | *bychu* | *možechu* | *jidú* | *dělachu* | *přijiechu* |

*Table 26. Old [cs] VerbForm=Fin | Mood=Ind | Tense=Past*

| Number | Person | be | can | go | do | accept |
|--------|--------|---------|-----------|----------|-------------|-------------|
| Sing | 1 | *biech* | *možiech* | *jdiech* | *dělajiech* | *přijiech* |
| Sing | 2 | *bieše* | *možieše* | *jdieše* | *dělajieše* | *přijieše* |
| Sing | 3 | *bieše* | *možieše* | *jdieše* | *dělajieše* | *přijieše* |
| Dual | 1 | *biechově* | *možiechově* | *jdiechově* | *dělajiechově* | *přijiechově* |
| Dual | 2 | *biešta* | *možiešta* | *jdiešta* | *dělajiešta* | *přijiešta* |
| Dual | 3 | *biešta* | *možiešta* | *jdiešta* | *dělajiešta* | *přijiešta* |
| Plur | 1 | *biechom* | *možiechom* | *jdiechom* | *dělajiechom* | *přijiechom* |
| Plur | 2 | *bište* | *možиešte* | *jdiešte* | *dělajiešte* | *přijiešte* |
| Plur | 3 | *biechu* | *možiechu* | *jdiechu* | *dělajiechu* | *přijiechu* |

*Table 27. Old [cs] VerbForm=Fin | Mood=Ind | Tense=Imp*

the past. Hence the Aspect feature should *not* be used to mark this tense. As discussed in Section 4, that feature should be reserved to denote the lexical aspect of Slavic verbs, bound to their lemma. Instead, Universal Features provide a feature dedicated to the imperfect tense, Tense=Imp.

Examples [bg]:

- *Когато се прибрах вкъщи, децата вече **спяха**. (Kogato se pribrah vkǎšti, decata veče spjaha)* "When I came home, the children were already asleep."
- *Щом **дойдеше**, веднага запалваше цигара. (Štom dojdeše, vednaga zapalvaše cigara.)* "Every time he came, he always lit a cigarette."

| Number | Person | be | can | go | do | accept |
|--------|--------|----|-----|----|----|--------|
| Sing | 1 | *бях* <br> *bjah* | *можах* <br> *možah* | *отивах* <br> *otivah* | *правих* <br> *pravih* | *акцептирах* <br> *akceptirah* |
| Sing | 2 | *беше, бе* <br> *beše, be* | *можа* <br> *moža* | *отива* <br> *otiva* | *прави* <br> *pravi* | *акцептира* <br> *akceptira* |
| Sing | 3 | *беше, бе* <br> *beše, be* | *можа* <br> *moža* | *отива* <br> *otiva* | *прави* <br> *pravi* | *акцептира* <br> *akceptira* |
| Plur | 1 | *бяхме* <br> *bjahme* | *можахме* <br> *možahme* | *отивахме* <br> *otivahme* | *правихме* <br> *pravihme* | *акцептирахме* <br> *akceptirahme* |
| Plur | 2 | *бяхте* <br> *bjahte* | *можахте* <br> *možahte* | *отивахте* <br> *otivahte* | *правихте* <br> *pravihte* | *акцептирахте* <br> *akceptirahte* |
| Plur | 3 | *бяха* <br> *bjaha* | *можаха* <br> *možaha* | *отиваха* <br> *otivaha* | *правиха* <br> *praviha* | *акцептираха* <br> *akceptiraha* |

*Table 28. [bg] VerbForm=Fin | Mood=Ind | Tense=Past*

| Number | Person | be | can | go | do | accept |
|--------|--------|----|-----|----|----|--------|
| Sing | 1 | *бях* <br> *bjah* | *можех* <br> *možeh* | *отивах* <br> *otivah* | *правех* <br> *praveh* | *акцептирах* <br> *akceptirah* |
| Sing | 2 | *беше, бе* <br> *beše, be* | *можеше* <br> *može* | *отиваше* <br> *otivaše* | *правеше* <br> *praveše* | *акцептираше* <br> *akceptiraše* |
| Sing | 3 | *беше, бе* <br> *beše, be* | *можеше* <br> *može* | *отиваше* <br> *otivaše* | *правеше* <br> *praveše* | *акцептираше* <br> *akceptiraše* |
| Plur | 1 | *бяхме* <br> *bjahme* | *можехме* <br> *možehte* | *отивахме* <br> *otivahme* | *правехме* <br> *pravehme* | *акцептирахме* <br> *akceptirahme* |
| Plur | 2 | *бяхте* <br> *bjahte* | *можехте* <br> *možehte* | *отивахте* <br> *otivahte* | *правехте* <br> *pravehte* | *акцептирахте* <br> *akceptirahte* |
| Plur | 3 | *бяха* <br> *bjaha* | *можеха* <br> *možeha* | *отиваха* <br> *otivaha* | *правеха* <br> *praveha* | *акцептираха* <br> *akceptiraha* |

*Table 29. [bg] VerbForm=Fin | Mood=Ind | Tense=Imp*

| Number | Person | be | can | go | do |
|--------|--------|-----|-----|-----|-----|
| Sing | 1 | БЪІХЪ<br>*bychъ* | МОГЪ<br>*mogъ* | ИДѢ, ІДѢ<br>*idъ* | ДѢЛАХЪ<br>*dělachъ* |
| Sing | 2 | БЪІСТЪ<br>*bystъ* | МОЖЕ<br>*može* | ИДЕ, ІДЕ<br>*ide* | ДѢЛАШЕ<br>*dělaše* |
| Sing | 3 | БЪІСТЪ, БЪ̆І<br>*bystъ, by* | МОЖЕ<br>*može* | ИДЕ, ІДЕ<br>*ide* | ДѢЛАШЕ<br>*dělaše* |
| Dual | 1 | БЪІХОВѢ<br>*bychově* | МОГОВѢ<br>*mogově* | ИДОВѢ, ІДОВѢ<br>*idově* | ДѢЛАХОВѢ<br>*dělachově* |
| Dual | 2 | БЪІСТА<br>*bysta* | МОЖЕТА<br>*možeta* | ИДЕТА, ІДЕТА<br>*ideta* | ДѢЛАСТА<br>*dělasta* |
| Dual | 3 | БЪІСТЕ<br>*byste* | МОЖЕТЕ<br>*možete* | ИДЕТЕ, ІДЕТЕ<br>*idete* | ДѢЛАСТЕ<br>*dělaste* |
| Plur | 1 | БЪІХОМЪ<br>*bychomъ* | МОГОМЪ<br>*mogomъ* | ИДОМЪ, ІДОМЪ<br>*idomъ* | ДѢЛАХОМЪ<br>*dělachomъ* |
| Plur | 2 | БЪІСТЕ<br>*byste* | МОЖЕТЕ<br>*možete* | ИДЕТЕ, ІДЕТЕ<br>*idete* | ДѢЛАСТЕ<br>*dělaste* |
| Plur | 3 | БЪІША<br>*byšę* | МОГѪ<br>*mogǫ* | ИДѪ, ІДѪ<br>*idǫ* | ДѢЛАША<br>*dělašę* |

*Table 30. [cu] VerbForm=Fin | Mood=Ind | Tense=Past*

| Numb | P | be | can | go | do |
|------|---|----|-----|----|----|
| Sing | 1 | БѢХЪ<br>*běchъ* | МОЖААХЪ<br>*možaachъ* | ИДѢАХЪ, ІДѢАХЪ<br>*iděachъ* | ДѢЛААХЪ<br>*dělaachъ* |
| Sing | 2 | БѢ<br>*bě* | МОЖААШЕ<br>*možaaše* | ИДѢАШЕ, ІДѢАШЕ<br>*iděaše* | ДѢЛААШЕ<br>*dělaaše* |
| Sing | 3 | БѢ, БѢАШЕ<br>*bě, běaše* | МОЖААШЕ<br>*možaaše* | ИДѢАШЕ, ІДѢАШЕ<br>*iděaše* | ДѢЛААШЕ<br>*dělaaše* |
| Dual | 1 | БѢХОВѢ<br>*běchově* | МОЖААХОВѢ<br>*možaachově* | ИДѢАХОВѢ, ІДѢАХОВѢ<br>*iděachově* | ДѢЛААХОВѢ<br>*dělaachově* |
| Dual | 2 | БѢСТА<br>*běsta* | МОЖААШЕТА<br>*možaašeta* | ИДѢАШЕТА, ІДѢАШЕТА<br>*iděašeta* | ДѢЛААШЕТА<br>*dělaašeta* |
| Dual | 3 | БѢАШЕТЕ, БѢСТЕ<br>*běašete, běste* | МОЖААШЕТЕ<br>*možaašete* | ИДѢАШЕТЕ, ІДѢАШЕТЕ<br>*iděašete* | ДѢЛААШЕТЕ<br>*dělaašete* |
| Plur | 1 | БѢХОМЪ<br>*běchomъ* | МОЖААХОМЪ<br>*možaachomъ* | ИДѢАХОМЪ, ІДѢАХОМЪ<br>*iděachomъ* | ДѢЛААХОМЪ<br>*dělaachomъ* |
| Plur | 2 | БѢСТЕ<br>*běste* | МОЖААШЕТЕ<br>*možaašete* | ИДѢАШЕТЕ, ІДѢАШЕТЕ<br>*iděašete* | ДѢЛААШЕТЕ<br>*dělaašete* |
| Plur | 3 | БѢАХѪ, БѢШѦ<br>*běachǫ, běšę* | МОЖААХѪ<br>*možaachǫ* | ИДѢАХѪ, ІДѢАХѪ<br>*iděachǫ* | ДѢЛААХѪ<br>*dělaachǫ* |

*Table 31. [cu] VerbForm=Fin | Mood=Ind | Tense=Imp*

| Number | Person | be | can | go | do | accept |
|--------|--------|-----|--------|--------|----------|-------------|
| Sing | 1 | *běch* | *mózech* | *dźěch* | *dźěłach* | *akceptowach* |
| Sing | 2 | *běše* | *mózeše* | *dźěše* | *dźěłaše* | *akceptowaše* |
| Sing | 3 | *běše* | *mózeše* | *dźěše* | *dźěłaše* | *akceptowaše* |
| Dual | 1 | *běchmoj* | *mózechmoj* | *dźěmoj* | *dźěłachmoj* | *akceptowachmoj* |
| Dual | 2 | *běštej* | *mózeštej* | *dźěštej* | *dźěłaštej* | *akceptowaštej* |
| Dual | 3 | *běštej* | *mózeštej* | *dźěštej* | *dźěłaštej* | *akceptowaštej* |
| Plur | 1 | *běchmy* | *mózechmy* | *dźěchmy* | *dźěłachmy* | *akceptowachmy* |
| Plur | 2 | *běšće* | *mózešće* | *dźěšće* | *dźěłašće* | *akceptowašće* |
| Plur | 3 | *běchu* | *mózechu* | *dźěchu* | *dźěłachu* | *akceptowachu* |

*Table 32. [hsb] VerbForm=Fin | Mood=Ind | Tense=Past*

## 10. Active Participle and Past Tense

[cs] *příčestí činné, minulý čas*; [sk] *minulý čas*; [hsb] *ł-forma, perfekt*; [pl] *czas przeszły*; [uk] *минулий час*; [ru] *прошедшее время*; [sl] *opisni deležnik na -l, preteklik*; [hr] *glagolski pridjev radni, prošlo vreme*; [bg] *минало деятелно свършено причастие, минало деятелно несвършено причастие*. Tables 33–42.

The typical formation of the past tense in most (but not all) modern Slavic languages is periphrastic, using a finite form of the auxiliary verb *to be* and the active participle (as opposed to the passive participle). The participle may also be called past participle because of its close ties to the past tense, and despite the fact that it is also used to form conditional or even the future tense. Sometimes the participle itself is called past tense (it makes sense because in some languages the auxiliary verb is omitted). Or it is simply called l-participle because its suffixes typically involve the consonant *-l*.

Early stages of Slavic languages (and those modern stages that retained the aorist) understand the constructions with the l-participle as perfect tenses that we know in English. Present perfect, past perfect and future perfect may be constructed, depending on the form of the auxiliary verb. Interestingly, the periphrastic past tense is also termed *préteritum* in Modern Czech (Academia, 1986), but the term *perfektum* prevails when Old Czech is described (Komárek et al., 1967) (cf. *Präterium = Imperfekt* vs. *Perfekt* in German).

Like other Slavic participles, the l-participle marks gender and number. Typically it has only the short form that is used in predicates, it does not inflect for case and is tagged `VERB` or `AUX`. Occasional long forms exist but they are considered derived adjectives and tagged `ADJ`. The derivation is not productive. It applies mainly to intransitive perfective verbs, while the passive participle would be used with transitive verbs for the same purpose. Example [cs]: *spadlý* "the one who fell down", *shnilý* "rotten", *pokleslý* "dropped". Annotating `VerbForm` of the derived adjective is purely optional. The short, predicative form should always have `VerbForm=Part`.

`Voice=Act` should also be always present so that the participle is distinguished from the passive participle.

Some Bulgarian verbs have two l-participles (past participles): perfect and imperfect. We cannot use the `Aspect` feature to distinguish them because the feature is bound to lemma, and an imperfective verb can have both perfect and imperfect participles. Nevertheless, the distinction is an analogy to the distinction between the two simple past tenses, and we will use the `Tense` feature to distinguish the participles. The default is `Tense=Past` (for past perfect participles). Past imperfect participles will get `Tense=Imp`.

It is less clear whether the l-participle should be annotated with `Tense=Past` in the other languages, in which it is not necessary to distinguish different types of l-participles. In many Slavic languages (especially the northern ones) this is the promi-

| Number | Gender | Animacy | be | can | go | do | accept |
|--------|--------|---------|------|-------|------|--------|------------|
| Sing | Masc | | *byl* | *mohl* | *šel* | *dělal* | *akceptoval* |
| Sing | Fem | | *byla* | *mohla* | *šla* | *dělala* | *akceptovala* |
| Sing | Neut | | *bylo* | *mohlo* | *šlo* | *dělalo* | *akceptovalo* |
| Plur | Masc | Anim | *byli* | *mohli* | *šli* | *dělali* | *akceptovali* |
| Plur | Masc | Inan | *byly* | *mohly* | *šly* | *dělaly* | *akceptovaly* |
| Plur | Fem | | | | | | |
| Plur | Neut | | *byla* | *mohla* | *šla* | *dělala* | *akceptovala* |

*Table 33. [cs] VERB,AUX | VerbForm=Part | Voice=Act | Tense=Past*

| Number | Gender | be | can | go | do | accept |
|--------|--------|------|-------|--------|--------|-------------|
| Sing | Masc | *bol* | *mohol* | *išiel* | *robil* | *akceptoval* |
| Sing | Fem | *bola* | *mohla* | *išla* | *robila* | *akceptovala* |
| Sing | Neut | *bolo* | *mohlo* | *išlo* | *robilo* | *akceptovalo* |
| Plur | | *boli* | *mohli* | *išli* | *robili* | *akceptovali* |

*Table 34. [sk] VERB,AUX | VerbForm=Part | Voice=Act | Tense=Past*

nent and default function of the l-participle.[9] Even in languages where it is used in periphrastic perfect tenses (which co-exist with simple past tenses), the perfect or resultative meaning implies that the action happened in the past, although the past is relative to a point in time that may be different from the moment of speaking. Therefore we recommend to include Tense=Past in the annotation.

See Section 18 for the annotation of l-participles used in the current UD datasets.

In Slovenian and Serbo-Croatian, the finite form of the auxiliary is used with all persons and numbers: *Je šel v šolo.* "He went to the school." *Sem šel v šolo.* "I went to the school." In Czech and Slovak, the finite form of the auxiliary is omitted in the 3rd person: *Šel do školy.* "He went to the school." *Šel jsem do školy.* "I went to the school." In Ukrainian and Russian, the auxiliary is omitted in all persons. That is why the subject cannot be dropped in Russian. The person could be understood from a finite verb but not from the participle, hence we need a personal pronoun: *Он пошел*

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[9]As mentioned above, it is also used in conditional and in some languages even in the future tense. Still, we are looking for distinctive features of individual words rather than of the periphrastic expressions. In a Slavic-wide perspective, Past seems as close as we can get without defining a language-specific feature for l-participles.

| Number | Gender | be | can | go | do | accept |
|--------|--------|------|--------|------|---------|-------------|
| Sing | Masc | *był* | *mohł* | *šoł* | *dźěłał* | *akceptował* |
| Sing | Fem | *była* | *móhła* | *šła* | *dźěłała* | *akceptowała* |
| Sing | Neut | *było* | *móhło* | *šło* | *dźěłało* | *akceptowało* |
| Dual |  | *byłoj* | *móhłoj* | *šłoj* | *dźěłałoj* | *akceptowałoj* |
| Plur |  | *byli* | *móhli* | *šli* | *dźěłali* | *akceptowali* |

*Table 35. [hsb] VERB,AUX | VerbForm=Part | Voice=Act | Tense=Past*

| Number | Gender | Animacy | be | can | go | do | accept |
|--------|--------|---------|------|--------|-------|--------|--------------|
| Sing | Masc |  | *był* | *mógł* | *szedł* | *robił* | *akceptował* |
| Sing | Fem |  | *była* | *mogła* | *szła* | *robiła* | *akceptowała* |
| Sing | Neut |  | *było* | *mogło* | *szło* | *robiło* | *akceptowało* |
| Plur | Masc | Anim | *byli* | *mogli* | *szli* | *robili* | *akceptowali* |
| Plur | Masc | Nhum | *były* | *mogły* | *szły* | *robiły* | *akceptowały* |
| Plur | Masc | Inan |  |  |  |  |  |
| Plur | Fem |  |  |  |  |  |  |
| Plur | Neut |  |  |  |  |  |  |

*Table 36. [pl] VERB,AUX | VerbForm=Part | Voice=Act | Tense=Past*

*в школу. (On pošel v školu.)* "He went to the school." *Я пошел в школу. (Ja pošel v školu.)* "I went to the school."

In Polish, the auxiliary and the participle have merged in one past-tense form. However, they can also attach to a preceding word: *Cieszę się, żeś zrozumiał.* "I am glad that you have understood." (The auxiliary *-ś* is attached to a conjunction.) *Myśmy nie wiedzieli, że przyjadą.* "We did not know they were coming." (Attached to a pronoun.) That is why the tokenization in the Polish treebank cuts off the finite morpheme as a separate syntactic word of a special type called "agglutination". We keep this approach to tokenization, emphasizing the parallelism between the Polish data and the other Slavic languages: *Poszedł do szkoły.* "He went to the school." *Poszedł-em do szkoły.* "I went to the school." (The hyphen in the second example indicates tokenization but it does not appear in the surface text.)

Note that there are other types of participles that could be (and sometimes are) called active participles. See Section 13 for details.

| Number | Gender | be | can | go | do | accept |
|--------|--------|----|-----|----|----|--------|
| Sing | Masc | *був*<br>*buv* | *міг*<br>*mih* | *йшов*<br>*jšov* | *робив*<br>*robyv* | *акцептував*<br>*akceptuvav* |
| Sing | Fem | *була*<br>*bula* | *могла*<br>*mohla* | *йшла*<br>*jšla* | *робила*<br>*robyla* | *акцептувала*<br>*akceptuvala* |
| Sing | Neut | *було*<br>*bulo* | *могло*<br>*mohlo* | *йшло*<br>*jšlo* | *робило*<br>*robylo* | *акцептувало*<br>*akceptuvalo* |
| Plur |  | *були*<br>*buly* | *могли*<br>*mohly* | *йшли*<br>*jšly* | *робили*<br>*robyly* | *акцептували*<br>*akceptuvaly* |

*Table 37. [uk] VERB,AUX | VerbForm=Part | Voice=Act | Tense=Past*

| Number | Gender | be | can | go | do | accept |
|--------|--------|----|-----|----|----|--------|
| Sing | Masc | *был*<br>*byl* | *мог*<br>*mog* | *шёл*<br>*šёl* | *делал*<br>*delal* | *акцептовал*<br>*akceptoval* |
| Sing | Fem | *была*<br>*byla* | *могла*<br>*mogla* | *шла*<br>*šla* | *делала*<br>*delala* | *акцептовала*<br>*akceptovala* |
| Sing | Neut | *было*<br>*bylo* | *могло*<br>*moglo* | *шло*<br>*šlo* | *делало*<br>*delalo* | *акцептовало*<br>*akceptovalo* |
| Plur |  | *были*<br>*byli* | *могли*<br>*mogli* | *шли*<br>*šli* | *делали*<br>*delali* | *акцептовали*<br>*akceptovali* |

*Table 38. [ru] VERB,AUX | VerbForm=Part | Voice=Act | Tense=Past*

| Number | Gender | be | can | go | do | accept |
|--------|--------|----|-----|----|----|--------|
| Sing | Masc | *bio* | *mogao* | *šao* | *delao* | *akceptirao* |
| Sing | Fem | *bila* | *mogla* | *šla* | *delala* | *akceptirala* |
| Sing | Neut | *bilo* | *moglo* | *šlo* | *delalo* | *akceptiralo* |
| Plur | Masc | *bili* | *mogli* | *šli* | *delali* | *akceptirali* |
| Plur | Fem | *bile* | *mogle* | *šle* | *delale* | *akceptirale* |
| Plur | Neut | *bila* | *mogla* | *šla* | *delala* | *akceptirala* |

*Table 39. [hr] VERB,AUX | VerbForm=Part | Voice=Act | Tense=Past*

| Number | Gender | be | can | go | do | accept |
|--------|--------|-----|-------|-----|--------|-------------|
| Sing | Masc | *bil* | *mogel* | *šel* | *delal* | *akceptiral* |
| Sing | Fem | *bila* | *mogla* | *šla* | *delala* | *akceptirala* |
| Sing | Neut | *bilo* | *moglo* | *šlo* | *delalo* | *akceptiralo* |
| Dual | Masc | *bila* | *mogla* | *šla* | *delala* | *akceptirala* |
| Dual | Fem | *bili* | *mogli* | *šli* | *delali* | *akceptirali* |
| Dual | Neut | | | | | |
| Plur | Masc | *bili* | *mogli* | *šli* | *delali* | *akceptirali* |
| Plur | Fem | *bile* | *mogle* | *šle* | *delale* | *akceptirale* |
| Plur | Neut | *bila* | *mogla* | *šla* | *delala* | *akceptirala* |

*Table 40. [sl] VERB,AUX | VerbForm=Part | Voice=Act | Tense=Past*

| Tense | Number | Gender | be | can | go | do | accept |
|-------|--------|--------|---------------|------------------|------------------|------------------|-------------------------|
| Past | Sing | Masc | *бил* <br> *bil* | *могъл* <br> *mogǎl* | *отивал* <br> *otival* | *правил* <br> *pravil* | *акцептирал* <br> *akceptiral* |
| Past | Sing | Fem | *била* <br> *bila* | *могла* <br> *mogla* | *отивала* <br> *otivala* | *правила* <br> *pravila* | *акцептирала* <br> *akceptirala* |
| Past | Sing | Neut | *било* <br> *bilo* | *могло* <br> *moglo* | *отивало* <br> *otivalo* | *правило* <br> *pravilo* | *акцептирало* <br> *akceptiralo* |
| Past | Plur | | *били* <br> *bili* | *могли* <br> *mogli* | *отивали* <br> *otivali* | *правили* <br> *pravili* | *акцептирали* <br> *akceptirali* |
| Imp | Sing | Masc | | *можел* <br> *možel* | | *правел* <br> *pravel* | |
| Imp | Sing | Fem | | *можела* <br> *možela* | | *правела* <br> *pravela* | |
| Imp | Sing | Neut | | *можело* <br> *možel o* | | *правело* <br> *pravelo* | |
| Imp | Plur | | | *можели* <br> *moželi* | | *правели* <br> *praveli* | |

*Table 41. [bg] VERB,AUX | VerbForm=Part | Voice=Act*

| Number | Gender | be | can | go | do |
|--------|--------|----|-----|-----|-----|
| Sing | Masc | БЫЛЪ<br>*bylъ* | МОГЛЪ<br>*moglъ* | ШЕЛЪ<br>*šelъ* | ДѢЛАЛЪ<br>*dělalъ* |
| Sing | Fem | БЫЛА<br>*byla* | МОГЛА<br>*mogla* | ШЛА<br>*šla* | ДѢЛАЛА<br>*dělala* |
| Sing | Neut | БЫЛО<br>*bylo* | МОГЛО<br>*moglo* | ШЛО<br>*šlo* | ДѢЛАЛО<br>*dělalo* |
| Dual | Masc | БЫЛА<br>*byla* | МОГЛА<br>*mogla* | ШЛА<br>*šla* | ДѢЛАЛА<br>*dělala* |
| Dual | Fem<br>Neut | БЫЛѢ<br>*bylě* | МОГЛѢ<br>*moglě* | ШЛѢ<br>*šlě* | ДѢЛАЛѢ<br>*dělalě* |
| Plur | Masc | БЫЛН<br>*byli* | МОГЛН<br>*mogli* | ШЛН<br>*šli* | ДѢЛАЛН<br>*dělali* |
| Plur | Fem | БЫЛЫ<br>*byly* | МОГЛЫ<br>*mogly* | ШЛЫ<br>*šly* | ДѢЛАЛЫ<br>*dělaly* |
| Plur | Neut | БЫЛА<br>*byla* | МОГЛА<br>*mogla* | ШЛА<br>*šla* | ДѢЛАЛА<br>*dělala* |

*Table 42. [cu] VERB,AUX | VerbForm=Part | Voice=Act | Tense=Past*

| Number | Sing | | | Dual | | | Plur | | |
|--------|------|---|---|------|---|---|------|---|---|
| Person | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| cs | *bych* | *bys* | *by* | | | | *bychom* | *byste* | *by* |
| sk | *by* | | | | | | | | |
| hsb | *bych* | *by* | *by* | *bychmoj* | *byštej* | *byštej* | *bychmy* | *byšće* | *bychu* |
| pl | *-bym* | *-byś* | *-by* | | | | *-byśmy* | *-byście* | *-by* |
| uk | б, би<br>*b, by* | | | | | | | | |
| ru | бы, б<br>*by, b* | | | | | | | | |
| sl | *bi* | | | | | | | | |
| hr | *bih* | *bi* | *bi* | | | | *bismo* | *biste* | *bi* |
| bg | бих<br>*bih* | би<br>*bi* | би<br>*bi* | | | | бихме<br>*bihme* | бихте<br>*bihte* | биха<br>*biha* |
| cu | БНМЬ<br>*bimь* | БН<br>*bi* | БН<br>*bi* | БНВѢ<br>*bivě* | БНСТА<br>*bista* | БНСТЕ<br>*biste* | БНМЪ<br>*bimъ* | БНСТЕ<br>*biste* | БѪ, БНШѦ<br>*bǫ, bišę* |

*Table 43. To be, AUX | VerbForm=Fin | Mood=Cnd.*

## 11. Conditional

[cs] *podmiňovací způsob;* [sk] *podmieňovací spôsob;* [hsb] *konjunktiw;* [pl] *tryb przypuszczający;* [uk] *умовний спосіб;* [ru] *условное наклонение, кондиционал;* [sl] *pogojnik;* [hr] *mogući način, potencijal* [bg] *условно наклонение.* Table 43.

The conditional mood (both present and past) is formed periphrastically using the active (l-) participle of the content verb and a special form of the auxiliary verb *to be*. The auxiliary form is annotated Mood=Cnd, the participle is not. The Tense feature of the auxiliary is empty. Some languages have present and past conditional but the difference is expressed analytically and the same auxiliary form is used in both.

The auxiliary form is finite and in some languages (e.g. Czech) it inflects for number and person. In other languages (e.g. Russian) it has been reduced to a single frozen form that is used in all persons and numbers. Some authors may prefer to tag the frozen auxiliary as particle (PART), but we suggest that it be tagged AUX, with the verb *to be* as its lemma, to keep the annotation parallel across Slavic languages.

In Slovak and Slovenian, the reduced particle-like conditional auxiliary *by / bi* is used and combined with the present indicative auxiliary exactly as for the past tense (all persons in Slovenian, only 1st and 2nd in Slovak). The present auxiliary is written separately. Similar analysis can be done in Polish where the present auxiliary takes the form of the agglutinating morpheme (cf. Section 10) but is treated as an independent syntactic word: *potrafili-by-śmy* "we would be able".

Sometimes the conditional auxiliary merges with a subordinating conjunction as in Czech *aby* "so that", *kdyby* "if", Polish *żebyście* "so that you", *gdybyśmy* "if we", or Russian *чтобы (čtoby)* "so that". According to the UD guidelines we should split such fusions back into syntactic words in the annotation *(что-бы)*.

## 12. Adverbial Participle (Transgressive)

[cs] *přechodník přítomný, přechodník minulý;* [sk] *prechodník;* [hsb] *transgresiw;* [pl] *imiesłów przysłówkowy współczesny, imiesłów przysłówkowy uprzedni;* [uk] *дієприслівник теперішнього часу, дієприслівник минулого часу;* [ru] *деепричастие настоящего времени, деепричастие прошедшего времени;* [sl] *deležje;* [hr] *glagolski prilog sadašnji, glagolski prilog prošli;* [bg] *деепричастие.* Tables 44–52.

Adverbial participles, also called transgressives, verbal adverbs, converbs (Nedjalkov and Nedjalkov, 1987) or even gerunds (Comrie and Corbett, 2001),[10] are nonfinite forms of verbs that can be used as adverbial modifiers in a clause. The circumstance they specify is that the action of the main verb happens *while* the action of the

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[10]The term *gerund* may cause confusion: in English it is close to verbal nouns (cf. Section 16), in Romance languages the term denotes present participles. The term *transgressive* is unique but it is not widely known. We can encounter it in descriptions of Czech and the Sorbian languages; more generally, its usage is limited to the German-Slavic linguistic tradition. We use the term here because it is part of the UD guidelines v1, encoded as the feature VerbForm=Trans.

| Tense | Number | Gender | be | can | go/come | do | accept |
|-------|--------|--------|-----|-----|---------|-----|--------|
| Pres | Sing | Masc | *jsa* | *moha* | *jda* | *dělaje* | *akceptuje* |
| Pres | Sing | Fem,Neut | *jsouc* | *mohouc* | *jdouc* | *dělajíc* | *akceptujíc* |
| Pres | Plur | | *jsouce* | *mohouce* | *jdouce* | *dělajíce* | *akceptujíce* |
| Past | Sing | Masc | *byv* | | *přišed* | *udělav* | *akceptovav* |
| Past | Sing | Fem,Neut | *byvši* | | *přišedši* | *udělavši* | *akceptovavši* |
| Past | Plur | | *byvše* | | *přišedše* | *udělavše* | *akceptovavše* |

*Table 44. [cs] VERB,AUX | VerbForm=Trans. Plural forms do not distinguish gender. The present and past transgressives in the "go/come" and "do" columns are forms of different lemmas (imperfective vs. perfective).*

| be | can | go | do | accept |
|-----|-----|-----|-----|--------|
| *súc* | *môžúc* | *idúc* | *robiac* | *akceptujúc* |

*Table 45. [sk] VERB,AUX | VerbForm=Trans | Tense=Pres. Modern Slovak has only the present transgressive.*

| Tense | be | can | go/come | do | accept |
|-------|-----|-----|---------|-----|--------|
| Pres | | *môžo* | *dźejo* | *dźěłajo, dźěłajcy* | *akceptujo, akceptujcy* |
| Past | *bywši* | | *póšowši, póšedši* | *nadźěławši* | *akceptowawši* |

*Table 46. [hsb] VERB,AUX | VerbForm=Trans. The present and past transgressives in the "do" column are forms of different lemmas (imperfective vs. perfective).*

transgressive is happening (present transgressive), or that it happens *after* the action of the transgressive has happened (past transgressive). The subject of the clause and of the transgressive is identical.

Present transgressives tend to be created from imperfective verbs and past transgressives from perfective verbs, but exceptions exist (Academia, 1986, p. 154). Again, Aspect should be fixed to lemma and not used to distinguish the two transgressives. The Tense feature should be used instead.

Transgressives are tagged VERB or AUX but not ADV, and their features include Verb-Form=Trans. In some languages they mark gender and number of the subject. In others they don't.

| Tense | be | can | go/come | do | accept |
|-------|-----|------|---------|------|--------|
| Pres | *będąc* | *mogąc* | *idąc* | *robiąc* | *akceptując* |
| Past | *bywszy* | | *poszedłszy* | *zrobiwszy* | *akceptowawszy* |

*Table 47. [pl] VERB,AUX | VerbForm=Trans. The present and past transgressives in the "go" and "do" columns are forms of different lemmas (imperfective vs. perfective).*

| Tense | be | can | go/come | do | accept |
|-------|-----|------|---------|------|--------|
| Pres | *будучи* *buduči* | *можучи* *možuči* | *йдучи* *jduči* | *роблячи* *robljači* | *акцептуючи* *akceptujuči* |
| Past | *бувши* *buvši* | *могши* *mohši* | *прийшовши* *pryjšovši* | *зробивши* *zrobyvši* | *акцептувавши* *akceptuvavši* |

*Table 48. [uk] VERB,AUX | VerbForm=Trans. The present and past transgressives in the "go/come" and "do" columns are forms of different lemmas (imperfective vs. perfective).*

| Tense | be | can | go/come | do | accept |
|-------|-----|------|---------|------|--------|
| Pres | *будучи* *buduči* | | *идя* *idja* | *делая* *delaja* | *акцептуя* *akceptuja* |
| Past | *быв, бывши* *byv, byvši* | *могши* *mogši* | *шедши* *šedši* | *делав, делавши* *delav, delavši* | *акцептовавши* *akceptovavši* |

*Table 49. [ru] VERB,AUX | VerbForm=Trans.*

| Tense | be | can | go/come | do | accept |
|-------|-----|------|---------|------|--------|
| Pres | *bodoč* | | *idoč* | *delaje* | *akceptiraje* |
| Past | *bivši* | | *prišedši* | *dodelavši* | *akceptiravši* |

*Table 50. [sl] VERB,AUX | VerbForm=Trans. The present and past transgressives in the "go/come" and "do" columns are forms of different lemmas (imperfective vs. perfective).*

| Tense | be | can | go/come | do | accept |
|-------|-----|------|---------|---------|-----------|
| Pres | *budući* | *mogući* | *idući* | *delajući* | *akceptirajući* |
| Past | *bivši* | | *došavši* | *dodelavši* | *akceptiravši* |

*Table 51. [hr] VERB,AUX | VerbForm=Trans. The present and past transgressives in the "go/come" and "do" columns are forms of different lemmas (imperfective vs. perfective).*

| be | can | go | do | accept |
|-----|-----|------|------|----------|
| *бъдейки, бидейки* *bădejki, bidejki* | *можейки* *možejki* | *отивайки* *otivajki* | *правейки* *pravejki* | *акцептирайки* *akceptirajki* |

*Table 52. [bg] VERB,AUX | VerbForm=Trans.*

## 13. Verbal Adjective or Active Participle

[cs] *přídavné jméno slovesné činné (zpřídavnělý přechodník)*; [sk] *činné príčastie*; [hsb] *prezensowy particip*; [pl] *imiesłów przymiotnikowy czynny*; [uk] *активний дієприкметник*; [ru] *действительное причастие*; [sl] *deležnik na -č, -ši*; [hr] *particip, glagolski pridjev*; [bg] *сегашно деятелно причастие.* Tables 53–61.

Active verbal adjectives (or participles) correspond to transgressives (see Section 12) and are different from the active l-participle (see Section 10). They are used attributively (not predicatively) and inflect for Case, except for Bulgarian that has neither long participles nor cases.

They should be tagged ADJ, not VERB or AUX, although their derivation from verbs is quite productive. Their lemma is the nominative singular form of the adjective, not the infinitive of the verb.

Optionally their relation to verbs may be documented using the features of VerbForm=Part, Voice=Act, Aspect (same as the aspect of the base verb) and Tense (whether they correspond to present or past transgressive). The meaning directly follows from the transgressive: [cs] *dělající* "one who is doing" (present verbal adjective); *udělavší* "one who has done" (past verbal adjective).

In standard Ukrainian, active verbal adjectives are considered ungrammatical, being a consequence of russification.[11]

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[11]http://nl.ijs.si/ME/V4/msd/html/msd.A-uk.html#msd-body.1_div.3_div.11_div.5_div.1

| Number | Sing | | | | Plur |
|---|---|---|---|---|---|
| Gender | Masc | | Neut | Fem | |
| Animacy | Anim | Inan | | | |
| Nom | *dělající* | | | *dělající* | *dělající* |
| Gen | *dělajícího* | | | | *dělajících* |
| Dat | *dělajícímu* | | | | *dělajícím* |
| Acc | *dělajícího* | *dělající* | | | *dělající* |
| Voc | *dělající* | | | | *dělající* |
| Loc | *dělajícím* | | | | *dělajících* |
| Ins | *dělajícím* | | | | *dělajícími* |

*Table 53. [cs] ADJ | Aspect=Imp | VerbForm=Part | Voice=Act | Tense=Pres. The adjective dělající means "doing" and is derived from the imperfective verb dělat "to do". The corresponding past adjective is udělavší, it is derived from the perfective verb udělat and uses the same suffixes.*

| Number | Sing | | | | Plur | | |
|---|---|---|---|---|---|---|---|
| Gender | Masc | | Neut | Fem | Masc | | Fem,Neut |
| Animacy | Anim | Inan | | | Anim | Inan | |
| Nom | *robiaci* | | *robiace* | *robiaca* | *robiaci* | *robiace* | |
| Gen | *robiaceho* | | | *robiacej* | *robiacich* | | |
| Dat | *robiacemu* | | | *robiacej* | *robiacim* | | |
| Acc | *robiaceho* | *robiaci* | *robiace* | *robiacu* | *robiacich* | *robiace* | |
| Loc | *robiacom* | | | *robiacej* | *robiacich* | | |
| Ins | *robiacim* | | | *robiacou* | *robiacimi* | | |

*Table 54. [sk] ADJ | Aspect=Imp | VerbForm=Part | Voice=Act | Tense=Pres. The adjective robiaci means "doing" and is derived from the imperfective verb robiť "to do". The corresponding past adjective is robivší with similar suffixes.*

| Nu | Sing | | | | Dual | | | Plur | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Ge | Masc | | Neut | Fem | Masc | | F.,N. | Masc | | F.,N. |
| An | An. | In. | | | An. | In. | | An. | In. | |
| Nom | *dźěłacy* | | *dźěłace* | *dźěłaca* | *dźěłacaj* | | *dźěłacej* | *dźěłaci* | | *dźěłace* |
| Gen | *dźěłaceho* | | *dźěłaceje* | | *dźěłaceju* | | | *dźěłacych* | | |
| Dat | *dźěłacemu* | | *dźěłacej* | | *dźěłacymaj* | | | *dźěłacym* | | |
| Acc | *dźěłaceho* | *dźěłacy* | *dźěłace* | *dźěłacu* | *dźěłaceju* | *dźěłacej* | | *dźěłacych* | | *dźěłace* |
| Loc | *dźěłacym* | | *dźěłacej* | | *dźěłacymaj* | | | *dźěłacych* | | |
| Ins | *dźěłacym* | | *dźěłacej* | | *dźěłacymaj* | | | *dźěłacymi* | | |

*Table 55. [hsb] ADJ | Aspect=Imp | VerbForm=Part | Voice=Act | Tense=Pres. The adjective dźěłacy means "doing" and is derived from the imperfective verb dźěłać "to do".*

| Number | Sing | | | | Plur | | |
|---|---|---|---|---|---|---|---|
| Gender | Masc | | Neut | Fem | Masc | | Fem,Neut |
| Animacy | Anim,Nhum | Inan | | | Anim | Nhum,Inan | |
| Nom | *robiący* | | *robiące* | *robiąca* | *robiący* | | *robiące* |
| Gen | *robiącego* | | *robiącej* | | *robiących* | | |
| Dat | *robiącemu* | | *robiącej* | | *robiącym* | | |
| Acc | *robiącego* | *robiący* | *robiące* | *robiącą* | *robiących* | | *robiące* |
| Voc | *robiący* | | *robiące* | *robiąca* | *robiący* | | *robiące* |
| Loc | *robiącym* | | *robiącej* | | *robiących* | | |
| Ins | *robiącym* | | *robiącą* | | *robiącymi* | | |

*Table 56. [pl] ADJ | Aspect=Imp | VerbForm=Part | Voice=Act | Tense=Pres. The adjective robiący means "doing" and is derived from the imperfective verb robić "to do". The corresponding past adjective is zrobiwszy, it is derived from the perfective verb zrobić and uses the same suffixes.*

| Number | Sing | | | | Plur |
|---|---|---|---|---|---|
| Gender | Masc | | Neut | Fem | |
| Animacy | Anim | Inan | | | |
| Nom | делающий delajuščij | | делающее delajuščee | делающая delajuščaja | делающие delajuščie |
| Gen | делающего delajuščego | | | делающей delajuščej | делающих delajuščih |
| Dat | делающему delajuščemu | | | делающей delajuščej | делающим delajuščim |
| Acc | делающего delajuščego | делающий delajuščij | делающее delajuščee | делающую delajuščuju | делающие delajuščie |
| Loc | делающем delajuščem | | | делающей delajuščej | делающих delajuščih |
| Ins | делающим delajuščim | | | делающей, делающею delajuščej, delajuščeju | делающими delajuščimi |

*Table 57. [ru] ADJ | Aspect=Imp | VerbForm=Part | Voice=Act | Tense=Pres. The adjective делающий (delajuščij) means "doing" and is derived from the imperfective verb делать (delat') "to do". The corresponding past adjective is сделавший (sdelavšij), it is derived from the perfective verb сделать (sdelat') and uses the same suffixes.*

| Nu | Sing | | | | Dual | | Plur | | |
|---|---|---|---|---|---|---|---|---|---|
| Ge | Masc | | Neut | Fem | Masc | Fem,Neut | Masc | Fem | Neut |
| An | Anim | Inan | | | | | | | |
| Nom | delajoč | | delajoče | delajoča | delajoča | delajoči | delajoči | delajoče | delajoča |
| Gen | delajočega | | | delajoče | delajočih | | | | |
| Dat | delajočemu | | | delajoči | delajočima | | delajočim | | |
| Acc | delajočega | delajoč | delajoče | delajočo | delajoča | delajoči | delajoče | | delajoča |
| Loc | delajočem | | | delajoči | delajočih | | | | |
| Ins | delajočim | | | delajočo | delajočima | | delajočimi | | |

*Table 58. [sl] ADJ | Aspect=Imp | VerbForm=Part | Voice=Act | Tense=Pres. The adjective delajoč / delajoči means "doing" and is derived from the imperfective verb delati "to do".*

| Number | Sing | | | | Plur | | |
|---|---|---|---|---|---|---|---|
| Gender | Masc | | Neut | Fem | Masc | Fem | Neut |
| Animacy | Anim | Inan | | | | | |
| Nom | *delajući* | | *delajuće* | *delajuća* | *delajući* | *delajuće* | *delajuća* |
| Gen | *delajućeg* | | | *delajuće* | *delajućih* | | |
| Dat | *delajućem* | | | *delajućoj* | *delajućim* | | |
| Acc | *delajućeg* | *delajući* | *delajuće* | *delajuću* | *delajuće* | | *delajuća* |
| Voc | *delajući* | | *delajuće* | *delajuća* | *delajući* | *delajuće* | *delajuća* |
| Loc | *delajućem* | | | *delajućoj* | *delajućim* | | |
| Ins | *delajućim* | | | *delajućom* | *delajućim* | | |

*Table 59. [hr] ADJ | Aspect=Imp | VerbForm=Part | Voice=Act | Tense=Pres.
The adjective delajući means "doing" and is derived from the imperfective verb delati "to
do". The corresponding past adjective is dodelavši, it is derived from the perfective verb
dodelati and uses the same suffixes.*

| Number | Sing | | | Plur |
|---|---|---|---|---|
| Gender | Masc | Fem | Neut | |
| Ind | *правещ* <br> *pravešt* | *равеща* <br> *pravešta* | *равещо* <br> *pravešto* | *правещи* <br> *praveši* |
| Def | *правещият* <br> *praveštijat* | *правещата* <br> *praveštata* | *равещото* <br> *praveštoto* | *правещите* <br> *praveštite* |

*Table 60. [bg] правещ (pravešt) "doing" ADJ | Aspect=Imp | VerbForm=Part |
Voice=Act | Tense=Pres. The rows correspond to different values of Definite.
Bulgarian adjectives do not inflect for Case.*

| Number | Sing | | | Dual | | |
|--------|------|------|------|------|------|------|
| Gender | Masc | Neut | Fem | Masc | Neut | Fem |
| Nom | дѣлаѩ<br>*dělaję* | | дѣлаѭщіи<br>*dělajǫšti* | дѣлаѭща<br>*dělajǫšta* | | дѣлаѭщіи<br>*dělajǫšti* |
| Gen | дѣлаѭщіа<br>*dělajǫšta* | | дѣлаѭщіѧ<br>*dělajǫštę* | дѣлаѭщіоу<br>*dělajǫštu* | | |
| Dat | дѣлаѭщіоу<br>*dělajǫštu* | | дѣлаѭщіи<br>*dělajǫšti* | дѣлаѭщіема<br>*dělajǫštema* | | дѣлаѭщіама<br>*dělajǫštama* |
| Acc | дѣлаѭщь<br>*dělajǫštь* | дѣлаѭще<br>*dělajǫšte* | дѣлаѭщѧ<br>*dělajǫštǫ* | дѣлаѭща<br>*dělajǫšta* | | дѣлаѭщіи<br>*dělajǫšti* |
| Voc | дѣлаѩ<br>*dělaję* | | дѣлаѭщіи<br>*dělajǫšti* | дѣлаѭща<br>*dělajǫšta* | | дѣлаѭщіи<br>*dělajǫšti* |
| Loc | дѣлаѭщіи<br>*dělajǫšti* | | | дѣлаѭщіоу<br>*dělajǫštu* | | |
| Ins | дѣлаѭщіемь<br>*dělajǫštemь* | | дѣлаѭщіеѭ<br>*dělajǫštejǫ* | дѣлаѭщіема<br>*dělajǫštema* | | дѣлаѭщіама<br>*dělajǫštama* |

...

| Number | Plur | | |
|--------|------|------|------|
| Gender | Masc | Neut | Fem |
| Nom | дѣлаѭще<br>*dělajǫšte* | дѣлаѭща<br>*dělajǫšta* | дѣлаѭщѧ<br>*dělajǫštę* |
| Gen | дѣлаѭщь<br>*dělajǫštь* | | |
| Dat | дѣлаѭщемъ<br>*dělajǫštemъ* | | дѣлаѭщамъ<br>*dělajǫštamъ* |
| Acc | дѣлаѭщѧ<br>*dělajǫštę* | дѣлаѭща<br>*dělajǫšta* | дѣлаѭщѧ<br>*dělajǫštę* |
| Voc | дѣлаѭще<br>*dělajǫšte* | дѣлаѭща<br>*dělajǫšta* | дѣлаѭщѧ<br>*dělajǫštę* |
| Loc | дѣлаѭщихъ<br>*dělajǫštichъ* | | дѣлаѭщахъ<br>*dělajǫštachъ* |
| Ins | дѣлаѭщіи<br>*dělajǫšti* | | дѣлаѭщами<br>*dělajǫštami* |

...

*Table 61. [cu] ADJ | Aspect=Imp | VerbForm=Part | Voice=Act | Tense=Pres.*
*The adjective* дѣлаѩ *(dělaję) means "doing" and is derived from the imperfective verb* дѣлати *(dělati) "to do". The corresponding past adjective is* съдѣлавъ *(sъdělavъ), it is derived from the perfective verb* съдѣлати *(sъdělati) and uses similar suffixes:  Sing Masc Gen* съдѣлавъша *(sъdělavъša), Sing Fem Nom* съдѣлавъши *(sъdělavъši) etc. The table shows the short ("strong") forms of the nominal declension.*

## 14. Passive Participle

[cs] *příčestí trpné, přídavné jméno slovesné trpné*; [sk] *trpné príčastie*; [hsb] *preteritowy particip*; [pl] *imiesłów przymiotnikowy bierny*; [uk] *пасивний дієприкметник*; [ru] *страдательное причастие*; [sl] *trpni deležnik*; [hr] *glagolski pridjev trpni*; [bg] *минало страдателно причастие*. Tables 62–72.

The passive participle is a non-finite verbal form used to construct the periphrastic passive. It is the only form that bears the feature `Voice=Pass`.

All the other verb forms may take part in passive constructions. Examples [cs]: *je nominován* "he is (being) nominated"; *byl jsem nominován* "I was nominated"; *byl bych nominován* "I would be nominated"; *budeš nominován* "you will be nominated"; *buďte nominován* "be nominated"; *být nominován* "to be nominated" etc. It is always the passive participle that makes the construction passive. The auxiliary verb forms do not differ morphologically from the forms used in the active voice, which is the default. Therefore they should either be marked `Voice=Act`, or the `Voice` feature should be left empty. We suggest that the explicit annotation of `Voice=Act` is mandatory for the other participles, so that all types of participles are explicitly distinguished. For the other verbal forms, the feature is optional.

Note that Slavic languages also have the reflexive passive, consisting of a reflexive pronoun and a 3rd person indicative verb ([cs] *Prezident **se volí** každé 4 roky.* "The president is elected every 4 years.") Although the analytical construction is passive, the participating verb is morphologically not passive and will not be marked as such. The passive nature of the clause will be visible in the dependency annotation (the subject will be attached as `nsubjpass` and the reflexive pronoun will be attached using the language-specific relation `auxpass:reflex`). In [ru] the reflexive pronoun is written as one word with the finite verb: *негласно считало**сь**, что ему простительно всякое* (*neglasno sčitalos', čto emu prostitel'no vsjakoe*) "it was silently thought that he could be forgiven everything". When it is used to form the reflexive passive, we could in theory mark the whole form as passive; however, we recommend to split the form to two syntactic words (*считало+сь / sčitalo+s'*) and make it parallel with the other Slavic languages.

Passive participles may have short and long forms. As explained above (see Section 3), this distinction can be interpreted as indefinite vs. definite adjectives in the south Slavic languages. In the north it applies to Czech and Russian, where the short forms are used predicatively, and their `Case` inflection almost vanished (Czech short participles may form accusative but it is very rare). Since we cannot distinguish the forms by the `Definite` feature here, we suggest to tag the short forms `VERB`, even though the remnants of case inflection make this decision slightly inconsistent with the rest.[12] The long forms are also called passive verbal adjectives and we treat them

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[12]We also lose the parallelism between short passive participles and short forms of adjectives in Czech (*nemocen* vs. *nemocný* "ill"). The short adjectives are used in predicates as well. This is a controversial issue and the guideline we propose may be revised in future.

| Number | Sing | | | | Plur | | | |
|---|---|---|---|---|---|---|---|---|
| Gender | Masc | | Neut | Fem | Masc | | Fem | Neut |
| Animacy | Anim | Inan | | | Anim | Inan | | |
| Nom | *dělaný* | | *dělané* | *dělaná* | *dělaní* | *dělané* | | *dělaná* |
| Gen | *dělaného* | | | *dělané* | *dělaných* | | | |
| Dat | *dělanému* | | | *dělané* | *dělaným* | | | |
| Acc | *dělaného* | *dělaný* | *dělané* | *dělanou* | *dělané* | | | *dělaná* |
| Voc | *dělaný* | | *dělané* | *dělaná* | *dělaní* | *dělané* | | *dělaná* |
| Loc | *dělaném* | | | *dělané* | *dělaných* | | | |
| Ins | *dělaným* | | | *dělanou* | *dělanými* | | | |
| VERB | *dělán* | | *děláno* | *dělána* | *děláni* | *dělány* | | *dělána* |

*Table 62. [cs] dělaný / dělán "done" ADJ,VERB | Aspect=Imp | VerbForm=Part | Voice=Pass.*

| Number | Sing | | | | Plur | | |
|---|---|---|---|---|---|---|---|
| Gender | Masc | | Neut | Fem | Masc | | Fem,Neut |
| Animacy | Anim | Inan | | | Anim | Inan | |
| Nom | *robený* | | *robené* | *robená* | *robení* | *robené* | |
| Gen | *robeného* | | | *robenej* | *robených* | | |
| Dat | *robenému* | | | *robenej* | *robeným* | | |
| Acc | *robeného* | *robený* | *robené* | *robenú* | *robených* | *robené* | |
| Loc | *robenom* | | | *robenej* | *robených* | | |
| Ins | *robeným* | | | *robenou* | *robenými* | | |

*Table 63. [sk] robený "done" ADJ | Aspect=Imp | VerbForm=Part | Voice=Pass.*

as adjectives derived from verbs. Their tag should be ADJ and their lemma should be the adjectival form in masculine singular nominative, not the verb infinitive. They can be used as attributive modifiers of noun phrases (with which they agree in gender, number and case).

The long forms of passive participles may also be used in predicates, especially in languages that have only the long forms (e.g. Slovak). However, since they are tagged as adjectives, the dependency layer will analyze them as adjectival predicates with a copula.

In Polish and Ukrainian, the attributive form of singular neuter is different from the predicative one: [uk] *писа**не** правило (pysa**ne** pravylo)* "a written rule" vs. *правило*

| Nu | Sing | | | | Dual | | | Plur | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Ge | Masc | | Neut | Fem | Masc | | F.,N. | Masc | | F.,N. |
| An | An. | In. | | | An. | In. | | An. | In. | |
| Nom | *dźěłany* | | *dźěłane* | *dźěłana* | *dźěłanaj* | *dźěłanej* | | *dźěłani* | | *dźěłane* |
| Gen | *dźěłaneho* | | | *dźěłaneje* | *dźěłaneju* | | | *dźěłanych* | | |
| Dat | *dźěłanemu* | | | *dźěłanej* | *dźěłanymaj* | | | *dźěłanym* | | |
| Acc | *dźěłaneho* | *dźěłany* | *dźěłane* | *dźěłanu* | *dźěłaneju* | *dźěłanej* | | *dźěłanych* | | *dźěłane* |
| Loc | *dźěłanym* | | | *dźěłanej* | *dźěłanymaj* | | | *dźěłanych* | | |
| Ins | *dźěłanym* | | | *dźěłanej* | *dźěłanymaj* | | | *dźěłanymi* | | |

*Table 64. [hsb] dźěłany "done" ADJ | Aspect=Imp | VerbForm=Part | Voice=Pass.*

| Number | Sing | | | | Plur | | |
|---|---|---|---|---|---|---|---|
| Gender | Masc | | Neut | Fem | Masc | | Fem,Neut |
| Animacy | Anim,Nhum | Inan | | | Anim | Nhum,Inan | |
| Nom | *robiony* | | *robione* | *robiona* | *robieni* | *robione* | |
| | | | *robiono* | | | | |
| Gen | *robionego* | | | *robionej* | *robionych* | | |
| Dat | *robionemu* | | | *robionej* | *robionym* | | |
| Acc | *robionego* | *robiony* | *robione* | *robioną* | *robionych* | *robione* | |
| Voc | *robiony* | | *robione* | *robiona* | *robieni* | *robione* | |
| Loc | *robionym* | | | *robionej* | *robionych* | | |
| Ins | *robionym* | | | *robioną* | *robionymi* | | |

*Table 65. [pl] robiony "done" ADJ | Aspect=Imp | VerbForm=Part | Voice=Pass.*

*писано (pravylo pysano)* "a rule is/was written". One might be tempted to tag the predicative forms as VERB instead of ADJ, to make them parallel with the short (predicative) participles in Czech and Russian. Unfortunately, that would mean that two very similar Ukrainian sentences would get different part-of-speech and dependency analyses just because their subjects differ in gender and/or number. Therefore it seems better to classify these forms as adjectives, too.

Slovenian and Serbo-Croatian inflect both short and long adjectives for Case, and the same applies to passive participles (passive verbal adjectives).

Definite adjectives are longer than indefinite also in Bulgarian and Macedonian, although the construction is different from that of [sl] and [hr]. The definite forms are used only attributively, the short forms both as attributes and predicates. As this

| Number | Sing | | | | Plur |
|--------|--------|--------|------|-----|------|
| Ge/An | M/Anim | M/Inan | Neut | Fem | |
| Nom | *делаемый*<br>*delaemyj* | *делаемое*<br>*delaemoe* | *делаемая*<br>*delaemaja* | *делаемые*<br>*delaemye* |
| Gen | *делаемого*<br>*delaemogo* | | | *делаемой*<br>*delaemoj* | *делаемых*<br>*delaemyh* |
| Dat | *делаемому*<br>*delaemomu* | | | *делаемой*<br>*delaemoj* | *делаемым*<br>*delaemym* |
| Acc | *делаемого*<br>*delaemogo* | *делаемый*<br>*delaemyj* | *делаемое*<br>*delaemoe* | *делаемую*<br>*delaemuju* | *делаемых, делаемые*<br>*delaemyh, delaemye* |
| Loc | *делаемом*<br>*delaemom* | | | *делаемой*<br>*delaemoj* | *делаемых*<br>*delaemyh* |
| Ins | *делаемым*<br>*delaemym* | | | *делаемой, делаемою*<br>*delaemoj, delaemoju* | *делаемыми*<br>*delaemymi* |
| VERB | *делаем*<br>*delaem* | | *делаемо*<br>*delaemo* | *делаема*<br>*delaema* | *делаемы*<br>*delaemy* |

*Table 66. [ru] ADJ,VERB | Aspect=Imp | VerbForm=Part | Voice=Pass | Tense=Pres.*

| Number | Sing | | | | Plur |
|--------|--------|--------|------|-----|------|
| Ge/An | M/Anim | M/Inan | Neut | Fem | |
| Nom | *сделанный*<br>*sdelannyj* | *сделанное*<br>*sdelannoe* | *сделанная*<br>*sdelannaja* | *сделанные*<br>*sdelannye* |
| Gen | *сделанного*<br>*sdelannogo* | | | *сделанной*<br>*sdelannoj* | *сделанных*<br>*sdelannyh* |
| Dat | *сделанному*<br>*sdelannomu* | | | *сделанной*<br>*sdelannoj* | *сделанным*<br>*sdelannym* |
| Acc | *сделанного*<br>*sdelannogo* | *сделанный*<br>*sdelannyj* | *сделанное*<br>*sdelannoe* | *сделанную*<br>*sdelannuju* | *сделанных, сделанные*<br>*sdelannyh, sdelannye* |
| Loc | *сделанном*<br>*sdelannom* | | | *сделанной*<br>*sdelannoj* | *сделанных*<br>*sdelannyh* |
| Ins | *сделанным*<br>*sdelannym* | | | *сделанной, сделанною*<br>*sdelannoj, sdelannoju* | *сделанными*<br>*sdelannymi* |
| VERB | *сделан*<br>*sdelan* | | *сделано*<br>*sdelano* | *сделана*<br>*sdelana* | *сделаны*<br>*sdelany* |

*Table 67. [ru] сделанный / сделан (sdelannyj / sdelan) "done" ADJ,VERB | Aspect=Perf | VerbForm=Part | Voice=Pass | Tense=Past.*

| Number | Sing | | | | Plur | |
|---|---|---|---|---|---|---|
| Gender | Masc | | Neut | Fem | | |
| Animacy | Anim | Inan | | | Anim | Inan |
| Nom | *зроблений*<br>*zroblenyj* | | *зроблене*<br>*zroblene* | *зроблена*<br>*zroblena* | *зроблені*<br>*zrobleni* | |
| | | | *зроблено*<br>*zrobleno* | | | |
| Gen | *зробленого*<br>*zroblenoho* | | | *зробленої*<br>*zroblenoï* | *зроблених*<br>*zroblenych* | |
| Dat | *зробленому*<br>*zroblenomu* | | | *зробленій*<br>*zroblenij* | *зробленим*<br>*zroblenym* | |
| Acc | *зробленого*<br>*zroblenoho* | *зроблений*<br>*zroblenyj* | *зроблене*<br>*zroblene* | *зроблену*<br>*zroblenu* | *зроблених*<br>*zroblenych* | *зроблені*<br>*zrobleni* |
| Loc | *зробленому*<br>*zroblenomu* | | | *зробленій*<br>*zroblenij* | *зроблених*<br>*zroblenych* | |
| Ins | *зробленим*<br>*zroblenym* | | | *зробленою*<br>*zroblenoju* | *зробленими*<br>*zroblenymu* | |

Table 68. [uk] *зроблений (zroblenyj)* "done" `ADJ | Aspect=Perf | VerbForm=Part | Voice=Pass`. The `Nom-Ins` rows show `Case` inflections of verbal adjectives.

| Number | Sing | | | Plur |
|---|---|---|---|---|
| Gender | Masc | Fem | Neut | |
| Ind | *правен*<br>*praven* | *правена*<br>*pravena* | *правено*<br>*praveno* | *правени*<br>*praveni* |
| Def | *правениjат*<br>*pravenijat* | *правената*<br>*pravenata* | *правеното*<br>*pravenoto* | *правените*<br>*pravenite* |

Table 69. [bg] *правен (praven)* "done" `ADJ | Aspect=Imp | VerbForm=Part | Voice=Pass`. The rows correspond to different values of `Definite`. Bulgarian adjectives do not inflect for `Case`.

also applies to passive participles, it seems appropriate to classify them (both forms) as `ADJ`. They do not inflect for `Case` but neither do adjectives because [bg] and [mk] have lost the case system.

Russian and Old Church Slavonic distinguish present and past passive participles: *журнал, читаемый студентом (žurnal, čitaemyj studentom)* "journal that is being read by the student" vs. *журнал, прочитанный студентом (žurnal, pročitannyj studentom)*

| Nu | Sing | | | | Dual | | Plur | | |
|---|---|---|---|---|---|---|---|---|---|
| Ge | Masc | | Neut | Fem | Masc | Fem,Neut | Masc | Fem | Neut |
| An | Anim | Inan | | | | | | | |
| Nom | delan | | delano | delana | delana | delani | delani | delane | delana |
| Gen | delanega | | | delane | delanih | | | | |
| Dat | delanemu | | | delani | delanima | | delanim | | |
| Acc | delanega | delan | delano | | delana | delani | delane | | delana |
| Loc | delanem | | | delani | delanih | | | | |
| Ins | delanim | | | delano | delanima | | delanimi | | |

Table 70. [sl] delan / delani "done" ADJ | Aspect=Imp | VerbForm=Part | Voice=Pass.

| Number | Sing | | | | Plur | | |
|---|---|---|---|---|---|---|---|
| Gender | Masc | | Neut | Fem | Masc | Fem | Neut |
| Animacy | Anim | Inan | | | | | |
| Nom | delan | | delano | delana | delani | delane | delana |
| Gen | delanog | | | delane | delanih | | |
| Dat | delanom | | | delanoj | delanim | | |
| Acc | delanog | delan | delano | delanu | delane | | delana |
| Voc | delan | | delano | delana | delani | delane | delana |
| Loc | delanom | | | delanoj | delanim | | |
| Ins | delanim | | | delanom | delanim | | |

Table 71. [hr] delan / delani "done" ADJ | Aspect=Imp | VerbForm=Part | Voice=Pass.

"journal that has been read by the student". The distinction will be annotated using the Tense feature. Note that other languages will have the Tense feature empty. Both the above examples will use the same (the only) passive participle in Czech, they will differ only by the prefix because the second verb is perfective: *časopis (pře)čtený studentem* "journal read by the student".

Passive participles are normally formed for transitive verbs, although verbs that subcategorize for a non-accusative object may also have a passive participle (neuter singular only).

| Number | Sing | | | Dual | | | |
|--------|------|------|------|------|------|------|---|
| **Gender** | **Masc** | **Neut** | **Fem** | **Masc** | **Neut** | **Fem** | |
| **Nom** | дѣлаемъ *dělajem* | дѣлаемо *dělajemo* | дѣлаема *dělajema* | дѣлаема *dělajema* | дѣлаемѣ *dělajemě* | | |
| **Gen** | дѣлаема *dělajema* | | дѣлаемы *dělajemy* | дѣлаемоу *dělajemu* | | | |
| **Dat** | дѣлаемоу *dělajemu* | | дѣлаемѣ *dělajemě* | дѣлаемома *dělajemoma* | | дѣлаемама *dělajemama* | |
| **Acc** | дѣлаемъ *dělajemъ* | дѣлаемо *dělajemo* | дѣлаемѫ *dělajemǫ* | дѣлаема *dělajema* | дѣлаемѣ *dělajemě* | | ... |
| **Voc** | дѣлаемъ *dělajemъ* | дѣлаемо *dělajemo* | | дѣлаема *dělajema* | дѣлаемѣ *dělajemě* | | |
| **Loc** | дѣлаемѣ *dělajemě* | | | дѣлаемоу *dělajemu* | | | |
| **Ins** | дѣлаемомь *dělajemotь* | | дѣлаемоѭ *dělajemojǫ* | дѣлаемома *dělajemoma* | | дѣлаемама *dělajemama* | |

| | Number | Plur | | |
|---|--------|------|------|------|
| | **Gender** | **Masc** | **Neut** | **Fem** |
| | **Nom** | дѣлаеми *dělajemi* | дѣлаема *dělajema* | дѣлаемы *dělajemy* |
| | **Gen** | дѣлаемъ *dělajemъ* | | |
| ... | **Dat** | дѣлаемомъ *dělajemotъ* | | дѣлаемамъ *dělajematъ* |
| | **Acc** | дѣлаемы *dělajemy* | дѣлаема *dělajema* | дѣлаемы *dělajemy* |
| | **Voc** | дѣлаеми *dělajemi* | дѣлаема *dělajema* | дѣлаемы *dělajemy* |
| | **Loc** | дѣлаемѣхъ *dělajǫštichъ* | | дѣлаемахъ *dělajǫštachъ* |
| | **Ins** | дѣлаемы *dělajemy* | | дѣлаемами *dělajemami* |

*Table 72. [cu] ADJ | Aspect=Imp | VerbForm=Part | Voice=Pass | Tense=Pres.
The adjective дѣлаем (dělajem) means "being done" and is derived from the imperfective
verb дѣлати (dělati) "to do". The corresponding past adjective is съдѣлан (sъdělan)
"done", it is derived from the perfective verb съдѣлати (sъdělati) and uses similar
suffixes: Sing Fem Nom съдѣлана (sъdělana), Sing Neut Nom съдѣлано (sъdělano)
etc. The table shows the short ("strong") forms of the nominal declension.*

| Example | Gloss | Languages | L | Tag | VerbFo | Voic | Tense | Defin |
|---------|-------|-----------|---|-----|--------|------|-------|-------|
| *budoucí* | *what will be* | all? | l | ADJ | (Part) | | (Fut) | |
| *delajoč* | *who is doing* | sl, bg, cu | s | ADJ | Part | Act | Pres | Ind |
| *dělající* | *who is doing* | all | l | ADJ | Part | Act | Pres | (Def) |
| *съдѣлавъ* | *who has done* | cu | s | ADJ | Part | Act | Past | Ind |
| *udělavší* | *who has done* | cs, sk, hsb, pl uk, ru, hr | l | ADJ | Part | Act | Past | (Def) |
| *dělal* | *did / (has) done* | all | s | VERB AUX | Part | Act | Past | |
| *правел* | *was doing* | bg | s | VERB | Part | Act | Imp | |
| *minulý* | *what has passed* | all? | l | ADJ | (Part) | | (Past) | |
| *dělán* | *(is (being)) done* | cs | s | VERB | Part | Pass | | |
| *delan* | *((who) is) done* | sl, hr, bg | s | ADJ | Part | Pass | | Ind |
| *dělaný* | *who is/was done* | cs, sk, hsb, pl, uk, sl, hr, bg | l | ADJ | Part | Pass | | (Def) |
| *делаем* | *(is being) done* | ru | s | VERB | Part | Pass | Pres | |
| *дѣлаемъ* | *(is being) done* | cu | s | ADJ | Part | Pass | Pres | Ind |
| *делаемый* | *who is being done* | ru, cu | l | ADJ | Part | Pass | Pres | (Def) |
| *сделан* | *(has been, is) done* | ru | s | VERB | Part | Pass | Past | |
| *съдѣлан* | *(who is) done* | cu | s | ADJ | Part | Pass | Past | Ind |
| *сделанный* | *who has been done* | ru, cu | l | ADJ | Part | Pass | Past | (Def) |

*Table 73. Participles. The "L" column denotes short vs. long forms. The* Def *feature only applies in languages where the* Ind *counterpart exists.*

## 15. Participle Summary

Participles are words that share properties of verbs and adjectives. Just like adjectives, they have short and long forms. Historically, the long forms emerged as a fusion of the short form and a pronoun. North Slavic languages either do not have the short form or they do not mark the Case on it. Short and long forms are distinguished by the POS tag (VERB/ADJ). South Slavic languages use the short form and inflect it for Case (except for [bg] and [mk], which have lost cases). The long form is definite. Both forms are ADJ; short vs. long is distinguished by Definite=Ind/Def. The l-participle is special. Its short form is VERB even in the south Slavic languages (the Definite and Case features of the short form are empty). Table 73 gives a summary of the proposed annotation of participles. Adverbial participles are not covered here because we tag them as transgressives (VerbForm=Trans, see Section 12). [cu] does not have transgres-

| Number | Sing | Plur |
|--------|------|------|
| Nom | *dělání* | *dělání* |
| Gen | *dělání* | *dělání* |
| Dat | *dělání* | *děláním* |
| Acc | *dělání* | *dělání* |
| Voc | *dělání* | *dělání* |
| Loc | *dělání* | *děláních* |
| Ins | *děláním* | *děláními* |

*Table 74. [cs] dělání "doing" `NOUN` | `Aspect=Imp`. The rows correspond to different values of Case.*

| Number | Sing | Plur |
|--------|------|------|
| Nom | *robenie* | *robenia* |
| Gen | *robenia* | *robení* |
| Dat | *robeniu* | *robeniam* |
| Acc | *robenie* | *robenia* |
| Loc | *robení* | *robeniach* |
| Ins | *robením* | *robeniami* |

*Table 75. [sk] robenie "doing" `NOUN` | `Aspect=Imp`. The rows correspond to different values of Case.*

sives but the nominative forms of its active participles correspond to transgressives and can be used as adverbial modifiers.

## 16. Verbal Noun

[cs] *podstatné jméno slovesné*; [sk] *slovesné podstatné meno*; [hsb] *werbalny substantiw*; [pl] *rzeczownik odczasownikowy*; [uk] *віддієслівний іменник*; [ru] *отглагольное существительное*; [sl] *glagolsko ime*; [hr] *radna (glagolska) imenica*; [bg] *отглаголно съществително име*. Tables 74–83.

Verbal noun is an abstract noun productively derived from a verb, denoting the action of the verb. It inflects for `Case` and `Number`, although it is only rarely seen in plural. Its gender is always `Neut`. We tag it `NOUN` and use its singular nominative form as the lemma (not the infinitive of the base verb).

The UD guidelines v1 suggest that `VerbForm=Ger` can be used to distinguish verbal nouns from other nouns. This works in English where the corresponding form is

| Number | Sing | Dual | Plur |
|--------|------|------|------|
| Nom | *dźěłanje* | *dźěłani* | *dźěłanja* |
| Gen | *dźěłanja* | *dźěłanjow* | |
| Dat | *dźěłanju* | *dźěłanjomaj* | *dźěłanjam* |
| Acc | *dźěłanje* | *dźěłani* | *dźěłanja* |
| Loc | *dźěłanju* | *dźěłanjomaj* | *dźěłanjach* |
| Ins | *dźěłanjom* | *dźěłanjomaj* | *dźěłanjemi* |

*Table 76. [hsb] dźěłanje "doing" `NOUN | Aspect=Imp`. The rows correspond to different values of `Case`.*

| Number | Sing | Plur |
|--------|------|------|
| Nom | *robienie* | *robienia* |
| Gen | *robienia* | *robień* |
| Dat | *robieniu* | *robieniom* |
| Acc | *robienie* | *robienia* |
| Voc | *robienie* | *robienia* |
| Loc | *robieniu* | *robieniach* |
| Ins | *robieniem* | *robieniami* |

*Table 77. [pl] robienie "doing" `NOUN | Aspect=Imp`. The rows correspond to different values of `Case`.*

termed *gerund*. Unfortunately, this feature might cause confusion in Slavic linguistics where some authors use the term *gerund* for adverbial participles (cf. Section 12). Hence we advise against using it with Slavic verbal nouns. Nevertheless, the verbal nouns may mark the `Aspect` of their base verb.

Verbal nouns use suffixes similar to passive participles. Unlike passive participles, they can be derived from intransitive verbs as well.

## 17. Negation

Slavic verbs are negated by a local variant of the morpheme *ne*, which is either a bound morpheme (prefix), or a separate word (particle). If it is a prefix, we do not cut it off during tokenization.

A standalone negating word is tagged `PART` and it has the feature `Negative=Neg`. On the dependency level, it is attached to the negated verb using the `neg` relation.

| Number | Sing | Plur |
|--------|------|------|
| Nom | *роблення*<br>*roblennja* | *роблення*<br>*roblennja* |
| Gen | *роблення*<br>*roblennja* | *роблень*<br>*roblen'* |
| Dat | *робленню*<br>*roblennju* | *робленням*<br>*roblennjam* |
| Acc | *роблення*<br>*roblennja* | *роблення*<br>*roblennja* |
| Loc | *робленні, робленню*<br>*roblenni, roblennju* | *робленнях*<br>*roblennjach* |
| Ins | *робленням*<br>*roblennjam* | *робленнями*<br>*roblennjamy* |

*Table 78. [uk] роблення (roblennja) "doing" `NOUN | Aspect=Imp`. The rows correspond to different values of `Case`.*

In the case of the negative prefix, the verb itself bears the `Negative=Neg` feature. This type of prefixing is considered inflectional rather than derivational, that is, the lemma is still the affirmative (unprefixed) infinitive. If the language negates verbs by prefixing, all affirmative forms of these verbs should be annotated `Negative=Pos`.

In periphrastic constructions it is normal that only one participating word is negated, but various languages may have different rules on what participant it should be. Cf. [cs] *Včera jsem **ne**šel domů.* "I did not go home yesterday." (negated participle) and [hr] *Jučer **ni**sam išao kući.* (negated auxiliary).

Verbal adjectives (long forms of participles) and verbal nouns are negated in a similar fashion.

Czech is an example of a language where all verbs are negated using the prefix *ne-*. Russian is an example of the opposite: all finite forms and the l-participles are negated using the particle *не (ne)*. With the other participles it becomes a prefix though: *несовершенный (nesoveršennyj)* "imperfect". Yet different is Croatian where the negative particle is the default, except for the verbs *biti*, *htjeti* and *imati* that take the negative morpheme as a prefix.

## 18. Current Data

UD version 1.2, released in November 2015, contains data from 6 Slavic languages: Czech, Polish, Slovenian, Croatian, Bulgarian and Old Church Slavonic. Most of these datasets distinguish `AUX` from `VERB` (except for [cu], which uses only the `VERB` tag) and most of them have a non-empty value of `VerbForm` for all verbs (auxiliary or not). Here

| Number | Sing | Plur |
|--------|------|------|
| Nom | *делание, деланье*<br>*delanie, delan'e* | *делания, деланья*<br>*delanija, delan'ja* |
| Gen | *делания, деланья*<br>*delanija, delan'ja* | *деланий*<br>*delanij* |
| Dat | *деланию, деланью*<br>*delaniju, delan'ju* | *деланиям, деланьям*<br>*delanijam, delan'jam* |
| Acc | *делание, деланье*<br>*delanie, delan'e* | *делания, деланья*<br>*delanija, delan'ja* |
| Loc | *делании, деланье, деланьи*<br>*delanii, delan'e, delan'i* | *деланиях, деланьях*<br>*delanijah, delan'jah* |
| Ins | *деланием, деланьем*<br>*delaniem, delan'em* | *деланиями, деланьями*<br>*delanijami, delan'jami* |

*Table 79. [ru] делание (delanie) "doing"* NOUN | Aspect=Imp. *The rows correspond to different values of* Case.

the exceptions are [hr] (finite verbs are not marked), [pl] (predicative nonverbs such as *to* "it (is)" are tagged VERB) and [bg] (empty VerbForms are probably annotation errors). [cu] uses the subjunctive mood (Mood=Sub) instead of Mood=Cnd for the conditional auxiliaries.

All but [bg] have occurrences of VerbForm=Inf, [cu] and [sl] also have VerbForm=Sup.

All languages except [pl] tag verbal nouns as regular NOUN, without setting the VerbForm. Polish tags them VERB with VerbForm=Ger.

VerbForm=Trans is used in [cs], [pl] and [sl]; In Czech and Polish their main part of speech is VERB (or AUX) while in Slovenian it is ADV. Croatian data ignores the Trans value and annotates transgressives as ADV plus VerbForm=Part. Bulgarian tags them as regular adverbs, without any distinctive feature.

By far the largest proportion of inconsistency is caused by participles.

[cs]: The l-participles are tagged VERB/AUX VerbForm=Part | Tense=Past | Voice=Act. Short forms of passive participles are tagged VERB VerbForm=Part | Voice=Pass (empty Tense). Long forms are tagged as regular adjectives (empty VerbForm). Active participles related to transgressives are tagged ADJ VerbForm=Part | Voice=Act and distinguished by tense and aspect: either Aspect=Imp | Tense=Pres or Aspect=Perf | Tense=Past.

[pl]: All participles are tagged VERB. Present active (progressive) participles are marked Voice=Act | Tense=Pres, while the passive participles have Voice=Pass and empty Tense. The l-participles are marked as finite forms (VerbForm=Fin instead of Part!) with Tense=Past and empty Voice.

| Number | Sing | Dual | Plur |
|--------|------|------|------|
| Nom | *delanje* | *delanji* | *delanja* |
| Gen | *delanja* | *delanj* | |
| Dat | *delanju* | *delanjema* | *delanjem* |
| Acc | *delanje* | *delanji* | *delanja* |
| Loc | *delanju* | *delanjih* | |
| Ins | *delanjem* | *delanjema* | *delanji* |

*Table 80. [sl] delanje "doing" NOUN | Aspect=Imp. The rows correspond to different values of Case.*

| Number | Sing | Plur |
|--------|------|------|
| Nom | *delanje* | *delanja* |
| Gen | *delanja* | *delanja* |
| Dat | *delanju* | *delanjima* |
| Acc | *delanje* | *delanja* |
| Voc | *delanje* | *delanja* |
| Loc | *delanju* | *delanjima* |
| Ins | *delanjem* | *delanjima* |

*Table 81. [hr] delanje "doing" NOUN | Aspect=Imp. The rows correspond to different values of Case.*

[sl]: The predicatively used l-participles are tagged VERB/AUX VerbForm=Part, with empty Voice and Tense. Participles tagged as adjectives (ADJ VerbForm=Part) are mostly passive participles, albeit their Voice feature is empty, too. However, some of them are adjectives derived from the l-participles *(minuli, ostali, odrasle)* and rarely also the present active participle *(boleče).*

[hr]: The l-participles are tagged VERB/AUX VerbForm=Part and they are the only active participles marked. Passive participles are tagged ADJ VerbForm=Part. The Tense and Voice features are always empty.

[bg]: Only the l-participles of the verb *to be* are tagged VERB/AUX VerbForm=Part. Predicatively used l-participles of other verbs appear as finite verbs (VerbForm=Fin), they are thus indistinguishable from the aorist and imperfect simple past tenses, respectively. For example, both *можах* and *могъл* (aorist and perfect l-participle of *could*) are annotated Voice=Act | Tense=Past. In parallel, both *можех* and *можел* (simple imperfect and imperfect l-participle of the same verb) are annotated Voice=Act

| Number | Sing | Plur |
|--------|------|------|
| Ind | *правене*<br>*pravene* | *правения, праvenета*<br>*pravenija, praveneta* |
| Def | *правенето*<br>*praveneto* | *правенията, праveneтата*<br>*pravenijata, pravenetata* |

*Table 82. [bg] правене (pravene) "doing" `NOUN | Aspect=Imp`. The rows correspond to different values of `Definite`. Bulgarian nouns do not inflect for `Case`.*

| Number | Sing | Dual | Plur |
|--------|------|------|------|
| Nom | ДѢЛАНИЕ<br>*dělanije* | ДѢЛАНИИ<br>*dělanii* | ДѢЛАНѢ<br>*dělanija* |
| Gen | ДѢЛАНѢ<br>*dělanija* | ДѢЛАНИЮ<br>*dělaniju* | ДѢЛАНИИ<br>*dělanii* |
| Dat | ДѢЛАНИЮ<br>*dělaniju* | ДѢЛАНИЕМА<br>*dělanijema* | ДѢЛАНИЕМЪ<br>*dělanijemъ* |
| Acc | ДѢЛАНИЕ<br>*dělanije* | ДѢЛАНИИ<br>*dělanii* | ДѢЛАНѢ<br>*dělanija* |
| Voc | ДѢЛАНИЕ<br>*dělanije* | ДѢЛАНИИ<br>*dělanii* | ДѢЛАНѢ<br>*dělanija* |
| Loc | ДѢЛАНИИ<br>*dělanii* | ДѢЛАНИЮ<br>*dělaniju* | ДѢЛАНИИХЪ<br>*dělaniichъ* |
| Ins | ДѢЛАНИЕМЬ<br>*dělanijemь* | ДѢЛАНИЕМА<br>*dělanijema* | ДѢЛАНИИ<br>*dělanii* |

*Table 83. [cu] ДѢЛАНИЕ (dělanije) "doing" `NOUN | Aspect=Imp`. The rows correspond to different values of `Case`.*

| `Tense=Imp`. All other participles, including some l-participles, are tagged `ADJ Verb-Form=Part` (they actually can take the definite suffix: *миналата, останалите, миналия*). Passive participles have empty `Tense`. Active participles are distinguished by `Tense=Pres` (imperfective verbs, progressive meaning) and `Tense=Past` (the l-participles).

[cu]: All participles are tagged `VERB VerbForm=Part` and no other part-of-speech tag occurs with the `VerbForm` feature. Except for the l-participle, which is relatively rare, all participle types can inflect for `Case`. Active participles are further distinguished by `Tense=Pres, Past` and in one case even `Fut` *(БѪДѪЩИИ)*. The l-participles have `Voice=Act` but no `Tense`; on the other hand, they have currently a special value

of `Aspect=Res`, disregarding the lexical aspect of the lemma. Passive participles use
the `Tense` feature to distinguish present and past forms.

## 19. Conclusion

We have presented the various combinations of morphological features of verbs
that occur in Slavic languages, and we have proposed their unified and consistent
representation within the Universal Dependencies framework. There already exist
UD treebanks of six Slavic languages and we have shown that their authors have not
always applied the UD annotation style in the same manner. Datasets for other lan-
guages are being prepared at the time of this writing, and their authors will have to
take similar decisions. Our proposal should contribute to further harmonization of
all these datasets: we hope to trigger discussion that will eventually lead to a more
precise specification of UD guidelines for Slavic languages.

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## Bibliography

Academia. *Mluvnice češtiny (2) Tvarosloví*. Academia, nakladatelství Československé akademie věd, Praha, Czechoslovakia, 1986.

Breu, Walter. *Probleme der Interaktion von Lexik und Aspekt (ILA)*, volume 412 of *Linguistische Arbeiten*. Niemeyer, Tübingen, Germany, 2000. ISBN 3-484-30412-X.

Comrie, Bernard and Greville G. Corbett. *The Slavonic Languages*. Routledge, London, UK, 2001. ISBN 0-415-04755-2.

Erjavec, Tomaž. MULTEXT-East: Morphosyntactic Resources for Central and Eastern European Languages. *Language Resources and Evaluation*, 46(1):131–142, 2012.

Komárek, Miroslav, Václav Vážný, and František Trávníček. *Historická mluvnice česká II. Tvarosloví*. Státní pedagogické nakladatelství, Praha, Czechoslovakia, 1967.

Nedjalkov, Vladimir P. and Igor' V. Nedjalkov. On the typological characteristics of converbs. In Help, Toomas, editor, *Symposium on language universals*, pages 75–79, Tallinn, Soviet Union, 1987.

Nivre, Joakim, Marie-Catherine de Marneffe, Filip Ginter, Yoav Goldberg, Jan Hajič, Christopher Manning, Ryan McDonald, Slav Petrov, Sampo Pyysalo, Natalia Silveira, Reut Tsarfaty, and Daniel Zeman. Universal Dependencies v1: A Multilingual Treebank Collection. In *Proceedings of the 10th International Conference on Language Resources and Evaluation (LREC 2016)*, Portorož, Slovenia, 2016. European Language Resources Association.

Przepiórkowski, Adam and Marcin Woliński. A Flexemic Tagset for Polish. In *Proceedings of Morphological Processing of Slavic Languages, EACL 2003*, 2003. URL `http://nlp.ipipan.waw.pl/~adamp/Papers/2003-eacl-ws12/ws12.pdf`.

Zeman, Daniel. Reusable Tagset Conversion Using Tagset Drivers. In *Proceedings of the 6th International Conference on Language Resources and Evaluation (LREC 2008)*, pages 213–218, Marrakech, Morocco, 2008. European Language Resources Association. ISBN 2-9517408-4-0.

Zeman, Daniel. Slavic Languages in Universal Dependencies. In Gajdošová, Katarína and Adriána Žáková, editors, *Natural Language Processing, Corpus Linguistics, E-learning (proceedings of SLOVKO 2015)*, pages 151–163, Bratislava, Slovakia, 2015. Slovenská akadémia vied, RAM-Verlag. ISBN 978-3-942303-32-3.

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