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Derivational viewpoint aspect systems: a cross-linguistic perspective

1. Introduction: a rough typology of aspectual systems

We are looking only at **viewpoint aspect** (Smith 1991/1997), which describes the speaker’s construal of the situation “as a single whole” (perfective) or with an “essential attention to the internal structure of the situation” (imperfective) (Comrie 1976: 16), or, using Klein’s (1994) terminology, the relation between situation time and topic time. On more fine-grained semantic distinctions in the domain of aspect see e.g. Johanson (2000), Tournadre (2004) and Plungjan (2011: 377–406). We believe that for our purposes the simplified coarse-grained division is sufficient.

We distinguish between two (idealized) types of aspectual system (cf. Dahl 1985: 84–89):

➔ **Inflectional**: aspectual interpretation is determined by a particular grammatical (synthetic or analytic) **form** of the verbal lexeme, by itself unspecified for viewpoint.

SPANISH (Indo-European > Romance; adapted from the internet)

- (1) a. *San Juan **escribió** (AOR) el Apocalipsis.*
 ‘Saint John wrote (pfv) the Apocalypse.’
 b. *Mientras San Juan **escribía** (IPF) el Apocalipsis...*
 ‘When Saint John was writing (ipfv) the Apocalypse...’

KARACHAY-BALKAR (Altaic > Turkic, Ljutikova et al. 2006: 235, 237)

- (2) a. *kerim baxca-ni **qaz-a-di***
 Kerim orchard-ACC dig-IPFV-3SG
 ‘Kerim is working (ipfv) in the orchard.’
 b. *men kel-gen-de kerim baxca-ni **qaz-a e-di***
 1SG come-PRF-TEMP Kerim orchard-ACC dig-IPFV AUX.PST-3SG
 ‘When I came, Kerim was working (ipfv) in the orchard.’
 c. *alim kel-gen-de kerim qabyt **zas-ti***
 Alim come-PRF-TEMP Kerim letter write-PST.3SG
 ‘When Alim came, Kerim wrote (pfv) || *was writing (ipfv) a letter.’

➔ **Derivational or verb-classifying**: aspectual interpretation is an inherent property of the **verbal lexeme**; in order to apply a different viewpoint to the same event, a new verb has to be **derived** by morphological means.

RUSSIAN (Indo-European > Slavic)

- (3) a. *Vasj-a **rež-et** luk.*
 Vasja-NOM.SG slice(IPFV)-PRS.3SG onion(ACC.SG)
 ‘Vasja is slicing (ipfv) onions.’
 b. *Kogda ja vošë-l, Vasj-a **reza-l** luk.*
 when I.NOM come.in(PFV)-PST Vasja-NOM.SG slice(IPFV)-PST onion(ACC.SG)
 ‘When I came in, Vasja was slicing (ipfv) onions.’
 c. *Vasja **po-reza-l** luk za dv-e minut-y.*
 Vasja-NOM.SG PRV-slice(IPFV)-PST onion(ACC.SG) in two-FEM minute-ACC.PL
 ‘Vasja sliced (pfv) the onions in two minutes.’

⇒ Other: more complex and “mixed” aspectual systems, e.g. those where both underived verbal stems and verbal inflectional markers are neutral with respect to aspectual viewpoint, while certain derivational markers can “fix” the perfective resp. imperfective interpretation of the derived lexeme.

KHAKAS (Altaic > Turkic, A.Sh. field data)

- (4) a. *ajdo pičik-ti pas-xan*
 Ajdo paper-ACC write-PST
 ‘Ajdo wrote (pfv) || was writing (ipfv) a letter.’
- b. *ajdo pičik-ti paz-ibis-xan*
 Ajdo paper-ACC write-PFV-PST
 ‘Ajdo wrote (pfv) || *was writing (*ipfv) a letter.’

NB In our study, we have only looked at derivational aspectual systems, leaving the “others” aside. As a preliminary observation, we can say that the latter seem to constitute a “transitional” type between the “pure” derivational and inflectional systems.

2. General features of the derivational aspectual systems

0) By definition, the perfective and the imperfective aspectual viewpoints characterize **verbal lexemes** and not just particular grammatical forms thereof. Application of different aspectual viewpoints to the same situation is possible by means of **perfectivizing** resp. **imperfectivizing** aspectual derivations.

1) Main characteristics of aspectual derivations:

(i) Being a separate lexeme, an aspectual derivate displays a full verbal paradigm, and not just some particular form or forms; i.e., aspectual derivations and aspectual viewpoints in derivational systems are in general independent of tense and other TAM features/values.

LITHUANIAN (Indo-European > Baltic, P.A. personal knowledge),

	Imperfective ‘write (ipfv)’	Perfective ‘write up (pfv)’
Present	<i>rašo</i>	<i>parašo</i>
Simple Past	<i>rašė</i>	<i>parašė</i>
Future	<i>rašys</i>	<i>parašys</i>
Habitual Past	<i>rašydavo</i>	<i>parašydavo</i>

(ii) Individual aspectual derivations do not form paradigms of obligatory morphosyntactic values, and the absence of a particular derivational marker does not necessarily signal a particular aspectual meaning.

RUSSIAN: *kupi-t’* (simplex Perfective) ‘buy’ vs. *ljubi-t’* (simplex Imperfective) ‘love’

(iii) Aspectual derivations are lexically constrained, sometimes in idiosyncratic ways (e.g. in Kartvelian languages and in Ossetic, perfectivizing prefixes do not perfectivize verbs of motion, see Tomelleri 2009, 2011).

(iv) Aspectual derivations are prone to lexicalization and semantic non-compositionality.

⇒ In typology, derivational or verb-classifying aspectual systems have been mostly discussed on the basis of Slavic languages, cf. the notion “Slavic-style aspect” coined by Dahl (1985: 84–89) and some subsequent work, e.g. Breu (1992), Johanson (2000: 139–145), Tomelleri (2010), Arkadiev (2014, 2015).

In the world-wide perspective such systems clearly constitute a rarity. However, our goal is to show that the cross-linguistic diversity in the domain of derivational aspectual systems is by no means limited to the better-known Slavic and “Slavic-style” systems.

⇒ The dichotomy between inflectional and derivational aspectual systems is partly similar to the distinction between so-called **resultative-based** vs. **bounder-based perfectives**

(Bybee & Dahl 1989; Bybee et al. 1994: 87–90), however, it is not identical to it — the latter dichotomy only applies to perfectives, while we are looking at both perfectivizing and imperfectivizing derivations.

➤ Derivational and inflectional aspectual systems can co-exist in one language, cf. the well-known case of Bulgarian (Comrie 1976: 23, 31–32; Maslov 2004/1984: 177–209; Lindstedt 1984):

BULGARIAN (Indo-European > Slavic)

	Imperfective	Perfective
Aorist	<i>pisa</i> ‘s/he wrote’	<i>napisa</i> ‘s/he wrote smth. up’
Imperfect	<i>pišeše</i> ‘s/he was writing’	<i>napišeše</i> ‘s/he used to write smth. up’

NB In our study we did not take into account inflectional aspectual categories present in derivational systems.

3. Data and sources

A pilot study with no “language sample” in any strict sense of the word.

Languages discussed are those which have been reported to have derivational aspectual systems or which we came across by accident. The best-known Slavic group is represented by just a few languages.

Mostly secondary data (grammars and special studies), therefore errors, misinterpretations and lacunae cannot be excluded.

➤ We will be very grateful for additional data and corrections!

The language sample:

Indo-European >

Slavic: Russian, Czech (Petrušina 2000), Bulgarian (Maslov 1981; Petrušina 2000),
Colloquial Upper Sorbian (Brau 2012)

Baltic: Lithuanian (Arkadiev 2012), Latvian (Hauzenberga-Šturma 1979; Horiguchi 2014)

Germanic: Yiddish (Aronson 1985, Gold 1999)

Romance: Istro-Romanian (Klepikova 1959, Hurren 1969)

Indo-Iranian: Ossetic (Levickaja 2004; Tomelleri 2011)

Kartvelian: Georgian (Vogt 1971; Tomelleri 2009)

Uralic >

Finno-Ugric: Hungarian (Majtinskaja 1959, Kiefer 1982), Mansi (Rombandeeva 1973), Livonian (de Sivers 1971)

Samoyedic: Enets (A.Sh.’s field data), Tundra Nenets (A.Sh.’s field data; Tereščenko 1947; Iosad et al. 2005), Nganasan (Gusev 2012; Tereščenko 1979), Selkup (Kuznecova et al. 1980; Kazakevič 2008)

Altaic > Tungusic: Evenki (Konstantinova 1964), Even (Cincius 1947; Robbek 1982)

Sino-Tibetan > Tibeto-Burman: Qiang (LaPolla & Huang 2003), Tangut (Kepping 1985)

Afroasiatic > Chadic: Margi (Hoffmann 1963)

Eskimo-Aleut: West Greenlandic (Fortescue 1984)

Pomoan: Kashaya (Oswalt 1960, 1990), Eastern Pomo (McLendon 1975)

Araucanian: Mapuche (Smeets 2008)

Quechuan: Southern Conchucos (Hintz 2011), Imbabura (Cole 1985), Huallaga (Weber 1996)

Aymaran: Aymara (Hardman et al. 2001; Haude 2003)

Austronesian > Oceanic: Mokilese (Harrison & Albert 1976), Kusaiean (Lee 1974)

Wakashan: Nootka (Davidson 2002), Kyuquot (Rose 1981)

4. Parameters of perfectivization and imperfectivization

4.1. (Preferred) direction of derivation

4.1.1. Predominantly perfectivizing

Slavic, Baltic, Yiddish, Ossetic, Georgian, Finno-Ugric, Qiangic, Oceanic, Margi, Aymara
OSSETIC (Indo-European > Indo-Iranian, Caucasus, Tomelleri 2011):

IPFV > PFV: *cæuyn* ‘go (ipfv)’ > *ra-cæuyn* ‘go out (pfv)’, *uarzyn* ‘love (ipfv)’ > *ba-uarzyn* ‘fall in love (pfv)’, *zaryn* ‘sing (ipfv)’ > *a-zaryn* ‘id. (pfv)’

PFV > IPFV: *ra-cæuyn* ‘go out (pfv)’ > *ra-sæj-cæuyn* ‘be going out (ipfv)’

MARGI (Chadic, Nigeria, Hoffmann 1963: 122, 126, 120):

IPFV > PFV: *gù* ‘seek, look for (ipfv)’ > *gù-bá* ‘find out (pfv)’, *kùtù* ‘see, look at (ipfv)’ > *kùt-ía* ‘see, look at (pfv)’, *ὴὴd̀d̀ú* ‘shake (ipfv)’ > *ὴὴd̀-árí* ‘shake a bit (pfv)’

PFV > IPFV: no

MOKILESE (Oceanic, Micronesia, Harrison & Albert 1976: Ch. 9):

IPFV > PFV: *rapahki* ‘search (ipfv)’ > *rapahkih-da* ‘find (pfv)’, *kang* ‘eat (ipfv)’ > *kang-la* ‘eat up (pfv)’

PFV > IPFV: no

4.1.2. Predominantly imperfectivizing

Samoyedic, Tungusic, Mapuche

ENETS (Uralic > Samoyedic, Siberia, examples from texts)

PFV > IPFV:

(5) a. *d'izi-zo-du?* *piri-?*
pot-DEST.SG-OBL.SG.3PL cook(PFV)-3PL.S
‘They cooked (pfv) a pot.’

b. *kasa-j?* *kare-zo-da* *piri-go*
man-NOM.SG.1SG fish-DEST.SG-OBL.SG.3SG cook(PFV)-DUR.3SG.S
‘My mate is cooking (ipfv) fish.’

(6) a. *buniki-n'?* *tɔtʃkoz* *ɔta-da-z?*
dog-PL.1DU then feed(PFV)-FUT-1SG.S
‘I will feed (pfv) our dogs.’

b. *fit* *ɔta-go-za-z?*
you(SG).ACC feed(PFV)-DUR-FUT-1SG.S
‘I will be feeding (ipfv) you.’

(7) a. *modʲ* *texe* *ηɔ-nʲ?* *kɔdi-?*
I there leg-PL.1SG freeze(PFV)-3PL.S
‘So my legs froze (pfv).’

b. *uzi-nʲ?* *kɔdi-ηa-?*
hand-PL.1SG freeze(PFV)-MULT-3PL.S
‘My hands are getting frozen (ipfv).’

IPFV > PFV:

(8) a. *kɔjkutʃi-d* *u,* ... *ɔzaxu-du?* *piʃiŋa-xi?*
be_improper(IPFV)-2SG.S you(SG) that_is_why-OBL.SG.3PL laugh(IPFV)-3DU.S
‘You look improper, that’s why they are laughing (ipfv).’

b. *kaza-zu?* ... *ηulʲ* *amul'e-ɔn* ... *piʃi-l-e-z?*
grandmother-NOM.SG.3PL very_terrible-PROL.SG laugh(IPFV)-INCH-M-3SG.M
‘Their grandmother ... started to laugh (pfv) strongly.’

EVENKI (Altaic > Tungusic, Siberia, Konstantinova 1964: 163, 165, 164):

PFV > IPFV: *nene-* ‘pass by (pfv)’ > *nene-d'e-* ‘go (ipfv)’, *nasana-* ‘wave one’s hand (pfv)’ > *nasana-hta-* ‘wave one’s hand (ipfv)’

IPFV > PFV: *bumu-* ‘be ill (ipfv)’ > *bumu-l-* ‘fall ill (pfv)’

MAPUCHE (Araucanian, Chile, Smeets 2007: 165, 168–169):

PFV > IPFV:

- (9) a. *liiq-iïy*
be_white(PFV)-IND.3
'It became white'.
b. *liiq-küle-y*
be_white(PFV)-STAT-IND.3
'It is white'.
- (10) a. *pe-fi-n* *fey*
see(PFV)-TR-IND.1SG he
'I got sight of him'.
b. *pe-nie-fi-n* *fey*
see(PFV)-PROG-TR-IND.1SG he
'I keep / kept an eye on him'.

IPFV > PFV: no

4.1.3. Without an evident predominant direction of derivation

Istro-Romanian, Quechuan, Pomoan, West Greenlandic, Wakashan

WEST GREENLANDIC (Eskimo-Aleut, Greenland, Fortescue 1984: 278, 282)

IPFV > PFV: *isir-* 'be coming (ipfv)' > *isir-sima-* 'come in (pfv)'

PFV > IPFV: *tuqu-* 'have died (pfv)' > *tuqu-lir-* 'be dying (ipfv)', *qulla-* 'come up (pfv)' > *qulla-riartur-* 'come higher and higher up (ipfv)'

SOUTHERN CONCHUCOS (Quechuan, Peru, Hintz 2011: 27, 30, 32; 50, 52, 56):

IPFV > PFV: *shushu-* 'fall (ipfv)' > *shushu-rpa-* 'fall down (pfv)', *apa-* 'take (ipfv)' > *apa-rku-* 'take along (pfv)', *paka-* 'be hiding (ipfv)' > *para-yka-* 'hide (pfv)'

PFV > IPFV: *ichi-* 'stand up (pfv)' > *ichi-ra:-* 'remain standing (ipfv)'

4.2. Morphology of perfectivization and imperfectivization

The most well-known formal means of perfectivization is prefixation with originally spatial meanings attested in Slavic and neighboring languages. Cross-linguistically, this is clearly an areal feature of Eastern Europe and the Caucasus (see Arkadiev 2014, 2015). Outside of this area perfectivizing prefixation is only attested in the Tibeto-Burman languages.

In many languages where spatial directional markers are used as perfectivizers (Margi, Pomoan, Oceanic, Quechuan), they are suffixes.

NB Verbal spatial affixation does not necessarily develop into perfectivization and does not imply verb-classifying aspect, cf. German, Nakh-Dagestanian, Abkhaz-Adyghean languages etc.

For imperfectivization, suffixal expression seems to be the default case, but in our sample in this function prefixes (Ossetic, Tangut) and reduplication (Oceanic) are also attested.

4.3. Semantic types of perfectivization and imperfectivization

4.3.1. Semantic types of perfectivization

– perfectivization of telic processes yielding the **completive** meaning of an event reaching its (inherent) endpoint:

AYMARA (Aymaran, Bolivia, Haude 2003: 36): *sawu-ña* 'weave (ipfv)' > *saw-su-ña* 'finish weaving (pfv)'

– perfectivization of atelic processes, usually denoting the starting point (**ingressive**), or, more rarely, the terminal point (**terminative**) of the process

IMBABURA QUECHUA (Quechuan, Ecuador, Cole 1985: 150)

- (11) *ruwana-ta rura-gri-rka*
poncho-ACC make(IPFV)-INGR-PST
'He began making a poncho.'

WEST GREENLANDIC (Eskimo-Aleut, Greenland, Fortescue 1984: 283)

- (12) *sialli-ssaar-puq*
rain(IPFV)-TERMIN-IND.3SG
'It has stopped raining.'

– perfectivization of states, normally denoting the entry into a state (**inceptive**)

MANSI (Uralic > Finno-Ugric, Rombandeeva 1973: 181): *kut's'(u)* ‘be drunk (ipfv)’ > *xot-kut's'(u)* ‘get drunk (pfv)’, *kantm(u)* ‘be angry (ipfv)’ > *xot-kantm(u)* ‘get angry (pfv)’

– **delimitative** perfectivization, denoting a temporally bounded situation not reaching its inherent endpoint (if any) (Slavic, Baltic, Ossetic, Nganasan, Livonian, Tungusic, Margi, Wakashan)

OSSETIC (Indo-European > Indo-Iranian, Caucasus, Axvlediani (ed) 1963: 238)

(13) *iw sal-dær aʒ-ə kwə a-kwəš-ta p'lotnik-æj ...*
 one so.much-INDF teay-OBL COMP PRV-work(IPFV)-PST.3SG carpenter-ABL
 ‘Having worked as a carpenter for several years...’

4.3.2. *Semantic types of imperfectivization*

– **event-internal imperfectivization**, focusing on the durative phase of a situation

NGANASAN (Uralic > Samoyedic, Gusev 2012: 332)

(14) *Tə, tə-məniŋ ŋonai-ʔ širkə-tə-ndi-ʔ hiŋd'i-ʔa ŋjütə-nduŋ*
 well that-PROL.ADV still-GEN.PL dig_out(PFV)-PROG-PRS-3PL.S further yet-3PL
 ‘They are digging (ipfv) further there.’

– **event-external imperfectivization**, “merging” singular events into a series of multiple events (**iterative**) or reinterpreting events as properties (**qualitative**)

ENETS (Uralic > Samoyedic, Siberia): *bεε-* ‘throw (pfv)’ > *bεε-ga-* ‘throw from time to time (ipfv)’, *dʷzi-* ‘hit (pfv)’ > *dʷzi-ga-* ‘hit from time to time (ipfv)’

SELKUP (Uralic > Samoyedic, Siberia, Kuznecova et al. 1980: 233): *təly-* ‘steal (pfv)’ > *tel-ty-* ‘be a thief (ipfv)’, *səty-* ‘bite (pfv)’ > *sat-ty-* ‘be disposed to bite (e.g. a dog) (ipfv)’

4.4. “Secondary” imperfectivization and perfectivization

Two further types of aspectual derivation defined purely formally on the basis of recursive application.

– secondary imperfectivization is applied to an already perfectivized verb.

Slavic, Lithuanian (but not Latvian), Ossetic, Istro-Romanian, Mansi, Qiangic, Pomoan, Wakashan, Even

RUSSIAN: *pisa-t'* ‘write’ (IPFV) > *pere-pisa-t'* ‘rewrite’ (PFV) > *pere-pis-yva-t'* ‘rewrite (durative or iterative)’ (IPFV)

KASHAYA (Pomoan, USA, Oswalt 1960: 165):

kel- ‘peek (ipfv)’ > *kel-ci-* ‘peek once (pfv)’ > *kél-ci-me-du* ‘be peeking once (ipfv)’

– secondary perfectivization is applied to an already imperfectivized verb.

Slavic, Samoyedic, Tungusic, West Greenlandic, Wakashan

TUNDRA NENETS (Uralic > Samoyedic, A.Sh.’s field data)

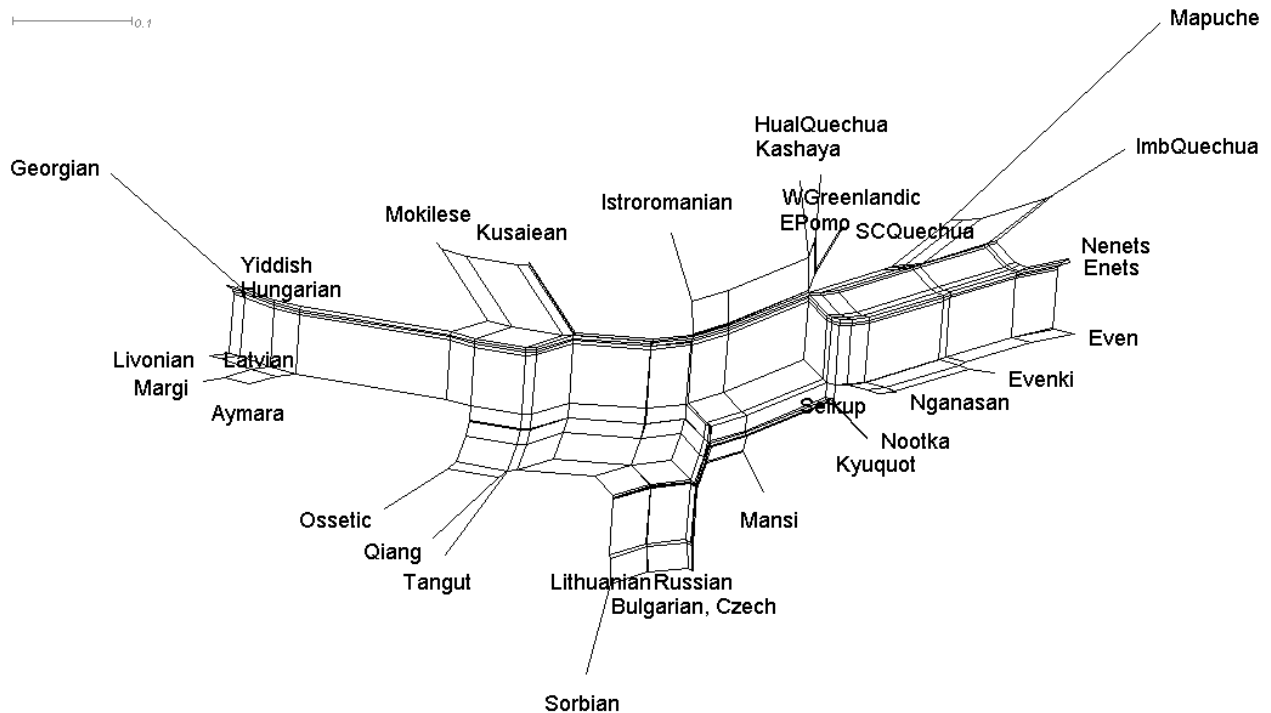
(15) a. *was'a xarda-n t'u*
 Vasja house-DAT.SG enter(PFV).3SG.S
 ‘Vasja entered (pfv) a house.’
 b. *was'a xarda-n t'u-nă*
 Vasja house-DAT.SG enter(PFV)-IPFV.3SG.S
 ‘Vasja is entering (ipfv) a house.’
 c. *was'a xarda-n t'u-nă-l-i-?*
 Vasja house-DAT.SG enter(PFV)-IPFV-INCH-M-3SG.M
 ‘Vasja started entering (pfv) a house.’

5. A preliminary typology

Parameters of the typology:

- 1) aspectual characteristic of the majority of simplex verbs (pfv, ipfv)
- 2) expression of perfectivization (pref, suf)
- 3) expression of imperfectivization (pref, suf)
- 4) number of perfectivizing derivations (zero, one, two, > two)
- 5) number of imperfectivizing derivations (zero, one, two, > two)
- 6) available semantic types of perfectivization
- 7) available semantic types of imperfectivization

Results in the NeighborNet format (Huson & Bryant 2006):



Preliminary observations on the clusterization of derivational aspectual systems:

- (1) a relatively homogeneous and at the same time genetically and geographically diverse cluster of languages lacking imperfectivization (Georgian, Hungarian, Yiddish, Latvian, Livonian, Margi, Aymara)
- (2) a relatively homogeneous cluster including the majority of the languages showing a “balance” of perfectivization and imperfectivization (Kashaya, Eastern Pomo, West Greenlandic, South Conchucos and Huallaga Quechua – languages of the Americas); but Wakashan languages, though “balanced” as well, rather cluster with the next group;
- (3) a highly heterogeneous cluster of languages with predominant imperfectivization (Samoyedic, Tungusic, Mapuche, Imbabura Quechua, Wakashan); note that Mapuche is the only language of our sample altogether lacking perfectivization
- (4) a highly heterogeneous cluster of languages with predominant perfectivization (Slavic, Lithuanian, Mansi, Istro-Romanian; Ossetic, Qiang, Tangut; + outsiders Mokilese and Kusaiean):
 - languages with prefixal perfectivization and secondary imperfectivization (Eurasia)
 - languages with suffixal perfectivization and no secondary imperfectivization (Oceanic)

⇒ To clarify the role of areal and genetic factors in the clusterization of aspectual systems we need more empirical data. There is no surprise that closely related languages cluster together (e.g. Slavic, Enets & Nenets, Wakashan, Pomoan), but this does not always work (cf. Lithuanian vs. Latvian, Hungarian vs. Mansi).

– What happens in the close relatives or neighbors of Margi, the only Chadic and African language of our sample?

An examination of a sample of ca. 30 Chadic languages shows that derivational aspect is by no means a common-Chadic feature: Chadic languages in general retain the Afroasiatic inflectional aspect system. The only candidate for a derivational aspect system besides Margi is Bura (Mu'azu & Balami 2010: 24-34), but additional data are needed. Bura is closely related to Margi: both of them belong to the A.2 subgroup of the Biu-Mandara branch of Chadic languages; for no other language of this subgroup are we aware of a detailed description of the aspect system. No other languages of West Africa have been reported to have productive derivation expressing aspect-related meanings and therefore to be candidates for inclusion into our sample.

– May we generalize Evenki and Even from our sample onto Tungusic languages in general? Definitely not: e.g. Udihe has an inflectional viewpoint aspect system (Nikolaeva & Tolskaya 2001) and Nanai is one of the languages we classify as “others” (Oskolskaya 2016).

6. Some generalizations and “universals”

Perfectivizing systems

⇒ Perfectivization is often based on markers with spatial meanings, therefore it is common for such systems to have many different perfectivizers, sometimes applicable to the same base verb yielding different meanings. Imperfectivization may be absent.

⇒ Perfectivization of atelic processes and states \subset perfectivization of telic processes

⇒ Secondary perfectivization \subset secondary imperfectivization

Imperfectivizing systems

⇒ No less than two distinct imperfectivizing derivations. Perfectivization may be absent, though if it is present, normally there are two or more distinct perfectivizers.

⇒ Perfectivization of telic processes \subset perfectivization of atelic processes and states

⇒ Secondary imperfectivization \subset secondary perfectivization

In general

⇒ Delimitative perfectivization \subset non-delimitative perfectivization of atelic processes and states

Prospects:

- extending the empirical coverage and revealing areal and genetic tendencies;
- explanation of the proposed implicational “universals”.

Abbreviations

1, 2, 3 – 1st, 2nd, 3rd person, ABL – ablative, ACC – accusative, ADV – adverbializer, AOR – aorist, AUX – auxiliary, COMP – complementizer, DAT – dative, DEST – destinative, DU – dual, DUR – durative, FEM – feminine, FUT – future, GEN – genitive, INCH – inchoative, IND – indicative, INDF – indefinite, INGR – ingressive, IPF – imperfect, IPFV – imperfective, M – middle cross-reference series, MULT – multiplicative, NOM – nominative, OBL – oblique, PFV – perfective, PL – plural, PRF – perfect, PROG – progressive, PROL – prolative, PRS – present, PRV – preverb or prefix, PST – past, S – subject cross-reference series, SG – singular, STAT – stative, TEMP – temporal adverbial, TERMIN – terminative, TR – transitive.

References

- Arkadiev P. (2012). Aspektual'naja sistema litovskogo jazyka (s privlečeniem areal'nyx dannyx) [The aspectual system of Lithuanian (with some areal data)]. In V. A. Plungjan (ed.), *Issledovanija po teorii grammatiki*, vyp. 6: *Tipologija aspektual'nyx sistem i kategorij* [Studies in the theory of grammar. Vol. 6. Typology of aspectual systems and categories]. *Acta Linguistica Petropolitana* 8(2), 45–121.
- Arkadiev P. (2014). Towards an areal typology of prefixal perfectivization. *Scando-Slavica* 60(2), 384–405.
- Arkadiev P. (2015). *Areal'naja tipologija prefiksalnogo perfektiva (na materiale jazykov Evropy i Kavkaza)* [Areal Typology of Prefixal Perfective in the Languages of Europe and the Caucasus]. Moscow: Jazyki slavjanskoj kul'tury.
- Aronson H.I. (1985). On aspect in Yiddish. *General Linguistics* 25, 171–188.
- Axvlediani G. S., ed. (1963). *Grammatika osetinskogo jazyka*. T. I. *Fonetika i morfologija*. [A Grammar of Ossetic. Vol. 1: Phonetics and Morphology]. Ordžonikidze.
- Breu W. (1992). Zur Rolle der Präfigierung bei der Entstehung von Aspektsystemen. In M. Guiraud-Weber, Ch. Zaremba (éd.), *Linguistique et slavistique. Melanges offerts à Paul Garde*, t.1. Paris, Aix-en-Provence: Presses universitaires de Provence, p. 119–135.
- Breu W. (2012). Aspect forms and functions in Sorbian varieties. *Sprachtypologie und Universalienforschung* 65(3), 246–266.
- Bybee J.L. & Ö. Dahl (1989). The creation of tense and aspect systems in the languages of the world. *Studies in Language*. 13 (1), 51–103.
- Bybee, J.L., R.D. Perkins & W. Pagliuca (1994). *The Evolution of Grammar. Tense, Aspect and Modality in the Languages of the World*. Chicago & London: The University of Chicago Press.
- Cincius V.I. (1947). *Očerk grammatiki èvenskogo (lamutskogo) jazyka* [A sketch grammar of Even (Lamut)]. Vol. 1. Leningrad: Učpedgiz.
- Cole P. (1985). *Imbabura Quechua*. London etc.: Croom Helm.
- Comrie B. (1976). *Aspect. An Introduction to the Study of Verbal Aspect and Related Problems*. Cambridge: Cambridge University Press.
- Dahl Ö. (1985). *Tense and Aspect Systems*. Oxford: Blackwell.
- Davidson M. (2002). *Studies in Southern Wakashan (Nootkan) Grammar*. PhD Dissertation, SUNY, Buffalo.
- de Sivers F. (1971). *Die lettischen Präfixe des livischen Verbs*. Nancy: CNRS.
- Fortescue M. (1984). *West Greenlandic*. London: Croom Helm.
- Gold E. (1999). *Aspect, Tense and the Lexicon: Expression of Time in Yiddish*. Doctoral Dissertation, Univ. of Toronto.
- Gusev V.Ju. (2012). Aspekt v nganasanskom jazyke [Aspect in Nganasan]. In V. A. Plungjan (ed.), *Issledovanija po teorii grammatiki*, vyp. 6: *Tipologija aspektual'nyx sistem i kate-*

- gorij [Studies in the theory of grammar. Vol. 6. Typology of aspectual systems and categories]. *Acta Linguistica Petropolitana* 8(2), 311–360.
- Hardman M., Vásques J., de Dios Japita J. (2001). *Aymara. Compendio de estructura fonológica e gramatical*. La Paz: Instituto de lengua y cultura aymara.
- Harrison Sh.Ph. & S.Y. Albert (1976). *Mokilese Reference Grammar*. Honolulu: The University Press of Hawaii.
- Haude K. (2003). *Zur Semantik von Direktionalität und ihren Erweiterungen: Das Suffix -su im Aymara*. Arbeitspapier Nr. 45 des Instituts für Sprachwissenschaft Universität zu Köln.
- Hauzenberga-Šturma E. (1979). Zur Frage des Verbalaspekts im Lettischen. *Zeitschrift für vergleichende Sprachforschung* 93, 279–316.
- Hintz D.J. (2011). *Crossing Aspectual Frontiers. Emergence, Evolution, and Intervowen Semantic Domains in South Conchucos Quechua Discourse*. Berkeley, Los Angeles, London: The University of California Press.
- Hoffmann C. (1963). *A Grammar of the Margi Language*. London: Oxford University Press.
- Horiguchi D. (2014). Some remarks on Latvian aspect. In A. Kalnača, I. Lokmane (sast. un red.). *Valoda: Nozīme un forma. 4. Kategoriju robežas gramatikā*. Rīga: LU Akadēmiskais apgāds, 22–32.
- Hurren H.A. (1969) Verbal aspect and archi-aspect in Istro-Rumanian. *La linguistique* 5(2), 59–90.
- Huson D.H. & D. Bryant (2006). Application of Phylogenetic Networks in Evolutionary Studies. *Molecular Biology and Evolution* 23(2), 254–267.
- Iosad P.V., Pazel'skaja [Pazelskaya] A.G., Cjurupa M.A. (2005). Tipologičeski značimye parametry glagol'noj leksiki: imperfektivirujuščie deerivacii neneckogo jazyka [Cross-linguistically relevant parameters of verbal lexicon: Nenets imperfectivizing derivations]. In V.I. Podlesskaja et al. (eds.) *Četvertaja tipologičeskaja škola*. Moscow: RGGU, 171–177.
- Johanson L. (2000). Viewpoint operators in European languages. In Ö. Dahl (ed.), *Tense and Aspect in the Languages of Europe*. Berlin, New York: Mouton de Gruyter, 27–187.
- Kazakevič O.A. (2008). K voprosy o modeljax opisanija sel'kupskoj glagol'noj derivacii [On models of description of Selkup verbal derivation]. In V.A. Plungjan & S.G. Tatevosov (eds.). *Issledovanija po glagol'noj derivacii* [Studies in verbal derivation]. Moscow: Jazyki slavjanskix kul'tur, 114–126.
- Kepping [Keping] K.B. (1985). *Tangutskij jazyk. Morfologija* [The Tangut Language. Morphology]. Moscow: Nauka.
- Kiefer F. (1982). The aspectual system of Hungarian, In F. Kiefer (ed.), *Hungarian General Linguistics*. Amsterdam, Philadelphia: John Benjamins, 293–329.
- Klein W. (1994). *Time in Language*. London, New York: Routledge.
- Klepikova G. P. (1959). Funkcii slavjanskix glagol'nyx prstavok v istrorumynskom [Functions of Slavic verbal prefixes in Istro-Romanian]. In: *Voprosy slavjanskogo jazykoznanija*. Vol. 4. Moscow: Izdatel'stvo AN SSSR, 34–72.
- Konstantinova O.A. (1964). *Èvenkijskij jazyk* [Evenki]. Moscow – Leningrad: Nauka.
- Kuznecova A.I., Xelimskij [Helimski] E.A., Gruškina E.V. (1980). *Očerki po sel'kupskomu jazyku. Tazovskij dialect* [Essays on Selkup. Taz dialect]. Moscow: Izdatel'stvo Moskovskogo universiteta.
- LaPolla R. & Ch. Huang (2003). *A Grammar of Qiang with Annotated Texts and Glossary*. Berlin, New York: Mouton de Gruyter.
- Lee K. (1974). *Kusaeian Verbal Derivational Rules*. Doctoral Dissertation, University of Hawaii.

- Levickaja A.A. (2004). Aspektual'nost' v osetinskom jazyke: genetičeskie predposylki, areal'nye svjazi, tipologičeskoe sxodstvo [Aspectuality in Ossetic: Genetic prerequisites, areal connections, typological parallels]. *Voprosy jazykoznanija* 1, 29–41.
- Lindstedt J. (1984). Nested aspects. In C. de Groot & H. Tommola (eds), *Aspect Bound: A Voyage into the Realm of Germanic, Slavonic and Finno-Ugrian Aspectology*. Dordrecht: Foris, 23–38.
- Ljutikova [Lyutikova] E.A., Tatevosov S.G., Ivanov M.Ju., Pazel'skaja [Pazelskaya] A.G., Šluinskij [Shluinsky] A.B. (2006). *Struktura sobytija i semantika glagola v karačaevo-balkarskom jazyke* [Event structure and semantics of verb in Karachay-Balkar]. Moscow: IMLI RAN.
- Majtinskaja K.E. (1959). *Vengerskij jazyk. Čast' II. Grammatičeskoe slovoobrazovanie*. [Hungarian. Part II: Grammatical Derivation] Moscow: Izdatel'stvo AN SSSR.
- Maslov Ju.S. (1981). *Grammatika bolgarskogo jazyka* [A Grammar of Bulgarian]. Moscow: Vysšaja škola.
- Maslov Ju.S. (1984/2004). *Očerki po aspektologii* [Aspectological Studies]. Leningrad: Leningrad State University. (Reprinted in: Ju.S. Maslov. *Izbrannye trudy. Aspektologija. Obščee jazykoznanie* [Selected Writings: Aspectology. General Linguistics]. Moscow: Jazyki slavjanskoj kul'tury, 2004, 21–302).
- McLendon S. (1975). *A Grammar of Eastern Pomo*. Berkeley, Los Angeles, London: University of California Press.
- Mu'azu M. A. & F. Balami. (2010). *A descriptive analysis of Bura verbs and vocabulary*. München: Lincom.
- Nikolaeva I. (2014). *A Grammar of Tundra Nenets*. Berlin, New York: Mouton de Gruyter.
- Nikolaeva I. & M. Tolskaya. (2001). *A grammar of Udihe*. Berlin – New York: Mouton de Gruyter.
- Oskolskaya S. (2016). K voprosu ob aspektual'noj sisteme nanajskogo jazykla [On the aspect system of Nanai]. *Voprosy jazykoznanija* 1, 76–93.
- Oswalt R.L. (1960). *A Kashaya grammar (Southwestern Pomo)*. PhD Thesis, University of Berkeley.
- Oswalt R.L. (1990). The perfective-imperfective opposition in Kashaya. *Proceedings of the 1990 Hoka-Penutian Languages Workshop* (Southern Illinois University Occasional Papers in Linguistics No. 15). Carbondale: Southern Illinois University Press, 43–51.
- Petruxina E.V. (2000). *Aspektual'nye kategorii glagola v ruskom jazyke v sopostavlenii s češskim, slovackim, pol'skim i bolgarskim jazykami* [Aspectual Categories in Russian Compared with Czech, Slovak, Polish and Bulgarian]. Moscow: Izdatel'stvo Moskovskogo universiteta.
- Plungjan [Plungian] V.A. (2011). *Vvedenie v grammatičeskiju semantiku: Grammatičeskie značenija i grammatičeskie sistemy jazykov mira* [An Introduction to Grammatical Semantics: Grammatical Meanings and Grammatical Systems of the World's Languages]. Moscow: RGGU.
- Robbek V.A. (1982). *Vidy glagola v èvenskom jazyke* [Verbal aspects in Even]. Leningrad: Nauka.
- Rombandeeva E.A. (1973). *Mansijskij (vogul'skij) jazyk* [Mansi (Vogul)]. Moscow: Nauka.
- Rose S.M. (1981). *Kyuquot grammar*. PhD Thesis, University of Victoria.
- Smeets I. (2007). *A Grammar of Mapuche*. Berlin, New York: Mouton de Gruyter.
- Smith C. (1991/1997). *The Parameter of Aspect*. Dordrecht: Kluwer (2nd ed. 1997).
- Tereščenko N.M. (1947). *Očerki grammatiki neneckogo (jurako-semoedskogo) jazyka* [A grammar sketch of Nenets (Yurak-Samoyed)]. Leningrad: Učpedgiz.
- Tereščenko N.M. (1979). *Nganasanskij jazyk* [Nganasan]. Leningrad: Nauka.

- Tomelleri V. (2009). Osservazioni sull'aspetto verbale in Georgiano (2). *Rivista Italiana di Linguistica e Dialettologia* 11, 49–109.
- Tomelleri V. (2010). Slavic-style aspect in the Caucasus. *Suvremena lingvistika* 36(69), 65–97.
- Tomelleri V. (2011). Sulla categoria dell'aspetto verbale in Osseto. In: *Anatolistica, indoeuropeistica e oltre nelle memorie dei seminarî offerti da Onofrio Carruba (anni 1997–2002) al Medesimo presentato*. Tomo I. Milano: Qu.A.S.A.R. S.R.L., 67–111.
- Tournadre N. (2004). Typologie des aspects verbaux et intégration à une théorie du TAM. *Bulletin de la Société de linguistique de Paris* 99(1), 7–68.
- Vogt H. (1971). *Grammaire de la langue géorgienne*. Oslo: Universitetsforlaget.
- Weber D.J. (1996). *Una gramática del Quechua del Huallaga (Huanuco)*. Lima: Instituto lingüístico de verano, Perú.