

On the Semantic Determinants of Inflection Class Membership: Evidence from Lithuanian

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Abstract

In this paper I argue that inflection class membership among the so-called ‘primary’ verbs in Lithuanian, which has always been considered to be extremely idiosyncratic, is at least partly predictable from the verb’s semantics. The most important semantic parameters responsible for inflection class assignment are agentivity of the verb’s highest ranking participant (thus most transitive and agentive intransitive ‘primary’ verbs share the same morphological features whereas non-agentive intransitives fall into another inflectional class) and the inherent aspectual properties of the verb (intransitive verbs denoting atelic and telic processes fall into different classes). These semantic features are cross-linguistically recognized as relevant for ‘unaccusativity’ or ‘split intransitivity’; thus Lithuanian inflectional morphology may be subsumed under a typologically well-established pattern.

1 Introduction

The verbal system of Lithuanian is notorious for both number and complexity of various morpho(phono)logical features whose combinations produce quite a large inventory of inflectional classes; see (Dressler et al., 2004) for a comprehensive analysis. The greatest diversity of patterns shows itself with the so-called ‘primary’ verbs (those whose infinitive is formed by attaching the suffix *-ti* directly to the root, like *bėg-ti* ‘to run’) which distinguish about 15 distinct patterns, see Table 1 for only a small subset of actual possibilities. The attempts to account for the distribution of these patterns in phonological or morphophonological terms (see e. g. Ambrasas (ed.), 1997) turn

out to be inadequate, especially when trying to predict whether the verb would fall into one of the two largest subclasses of ‘primary’ verbs: those having the nasal infix or the suffix *-st-* in the Present stem¹ (e. g. *migti* ‘to fall asleep’, *dingti* ‘to disappear’ in Table 1; they will be called *n/st*-verbs hereafter) vs. those palatalizing the last consonant of both Present and Past stems² (e.g. *geriti* ‘to drink’ in Table 1, *knarkti* ‘to snore’; they will be called *j*-verbs in the subsequent text).

Infinitive	Present3Sg	Past3Sg	Gloss
<i>bėgti</i>	<i>bėga</i>	<i>bėgo</i>	‘run’
<i>migti</i>	<i>minga</i>	<i>migo</i>	‘fall asleep’
<i>dingti</i>	<i>dingsta</i>	<i>dingo</i>	‘disappear’
<i>gimti</i>	<i>gimsta</i>	<i>gimė</i>	‘be born’
<i>geriti</i>	<i>geria</i>	<i>gėre</i>	‘drink’

Table 1. Some inflectional classes of Lithuanian primary verbs

The main goal of this paper is to argue that the verb’s assignment to one of the two major subclasses (viz. the aforementioned *n/st*-class and *j*-class) is to a great extent determined by its semantics.

2 The semantics of *n/st*-verbs

A closer examination of the meanings of verbs belonging to the *n/st*-class reveals that with minor exceptions they form a semantically coherent class: almost 90% of these verbs (the class comprises more than 250 lexemes)

¹ The distribution of the infix and the suffix themselves is purely phonological, see (Stang, 1942).

² Palatalization is orthographically expressed by *-i-* between the consonant and the following vowel or by the ending *-ė* in the Past forms.

denote telic eventualities whose only participant is a Patient (viz., has enough Proto-Patient properties in the sense of (Dowty, 1991), (Ackerman and Moore, 2001)): *aušti* ‘to cool down’, *blukti* ‘to fade away’, *dužti* ‘to break (intr.)’, *gižti* ‘to turn sour’, *kimti* ‘to become hoarse’, *lipti* ‘to stick’, *pigti* ‘to become cheaper’, *rausti* ‘to become red’ etc. These verbs may be characterized as denoting externally caused eventualities in the sense of (Levin and Rappaport Hovav, 1995, 1998) thus sharing the following lexico-semantic representation:

- (1) [ACTIVITY] CAUSE [BECOME[STATE(x)]]

The main feature distinguishing these verbs from their transitive counterparts, which often belong to the *j*-class (cf. *linkti* ‘to bend (intr.)’ — Present *linksta* vs. *lenkti* ‘to bend (tr.)’ — Present *lenkia*) is that the latter require the explicit specification of both the activity and its instigator, the Agent, while the former leave this semantic component and its participant completely unspecified. Thus the following may serve as refined lexico-semantic representations of *linkti* and *lenkti*:

- (2) *linkti*: $\lambda y \exists x$ [ACT(x)] CAUSE
[BECOME[BENT(y)]]

- (3) *lenkti*: $\lambda y \lambda x$ [ACT(x)] CAUSE
[BECOME[BENT(y)]]

There are some verbs in the *n/st*-class which at first sight do not conform to the above stated prototype. Those are e.g. agentive³ intransitives *kilti* ‘to rise’ and *sprukti* ‘to flee’ and transitive *justi* ‘to (come to) feel’ and *mėgti* ‘to (come to) like’. However, I believe that at least these putative exceptions can be subsumed under the semantic prototype of the *n/st*-class. The first two verbs denote directed motion and are telic; they have the following lexico-semantic representation:

- (4) λx [ACT(x)] CAUSE [BECOME[STATE(x)]]

The other pair, although syntactically transitive, are non-canonical dyadic predicates (see e.g. (Tsunoda, 1985) for a cross-linguistic survey of such verbs), whose highest ranking participant has just a few of the Proto-Agent properties; what they have in common with the prototypical telic intransitives is that the

³ However, *kilti* may be used with a whole variety of subjects, not necessarily animate and agentive, cf. *vandens lygis kyla* ‘the water level rises’; besides, like quite a number of non-agentive *n/st* verbs, *kilti* has a transitive *j*-counterpart: *kelti*.

change-of-state component embedded into their meaning is predicated of the highest ranking participant (= syntactic subject); cf. similar observations made for auxiliary selection in Dutch in (Lieber and Baayen, 1997). Therefore, it is possible to speculate that inflection class assignment and argument selection in Lithuanian are sensitive to different semantic properties of predicates, but I am not going to pursue this topic further, since I have not investigated it in sufficient depth.

Thus, although not all verbs belonging to the *n/st*-class may be fully subsumed under the semantic prototype of telic patientive intransitives, the class itself may be adequately characterized semantically.

3 The semantic classes of *j*-verbs

The *j*-class is much less semantically homogenous than the *n/st*-class. It comprises almost 400 lexemes of which more than 50 % are (canonical) transitives, such as *verpti* ‘to spin (thread)’, *arti* ‘to plough’, *drožti* ‘to plane’, *ližti* ‘to lick’, *rėžti* ‘to cut’, *blokšti* ‘to throw’, *klausti* ‘to ask’ etc. The intransitive *j*-verbs form a large group and fall into several subclasses:

(i) verbs of internally caused sound emission: *bimbti* ‘to buzz’, *gergžti* ‘to talk hoarsely’, *knarkti* ‘croak’, *pipti* ‘peep’ etc.;

(ii) verbs of light or smell emission: *pliksti* ‘to shine’, *dvokti* ‘to stink’;

(iii) agentive verbs of manner of motion: *plaukti* ‘to swim’, *kuisti* ‘to run very fast’, *lėkti* ‘to fly’ etc.;

(iv) verbs denoting natural activities, most probably conceptualized as caused by an Agent-like natural force: *bliaukti* ‘to flow (of a stream)’, *dumti* ‘to blow (of the wind)’ etc.;

(v) verbs denoting activities with a human protagonist: *brūzti* ‘to toil’, *žaisti* ‘to play’ etc.

It is clear that the intransitive *j*-verbs share an important semantic feature: they denote internally caused atelic eventualities. This may be clearly seen from the contrast between agentive verbs of motion belonging to the *j*-class and to the *n/st*-class: the latter are verbs of directed motion (telic) while the former are verbs of manner of motion (atelic), cf. (Levin and Rappaport Hovav, 1990, 1995). The common lexico-semantic representation of intransitive *j*-verbs is the following:

- (5) λx [ACT<MANNER>(x)]

It is also not surprising that both agentive intransitive and transitive verbs fall into the *j*-class: the feature they share is the Activity

component predicated of their highest ranking participant, cf. (3) and (5).

4 Other verb classes

Other subclasses of Lithuanian primary verbs have considerably fewer members, and it is hard to postulate a coherent semantic basis for any of them. Among the verbs which fall into these minor classes there are both transitive and intransitive predicates, and the latter may be either agentive or patientive.

However, while it is not possible to semantically motivate inflectional properties of *all* members of the minor morphological classes, it seems that such a motivation nevertheless can be found for some such verbs. For instance, consider the following lexemes: *sėsti* ‘to sit down’, *lipti* ‘to climb’, *lįsti* ‘to penetrate into smth.’; they have neither infix/*st*-suffix, nor *j*-suffix: Present *sėda*, Past *sėdo*. What they have in common semantically, as it seems, is both genuine agentivity of the subject (these verbs usually allow only animate subjects) and the ‘change of state’ component. Thus, they do not fall under either prototype stated above, and this is, probably, the reason why they are not assigned to either of the major inflectional classes.

Another small set of predicates for which a putative explanation of their inflectional class membership can be adduced are three labile verbs, which have both causative and inchoative (Haspelmath, 1993) uses: *degti* ‘to burn’, *kepti* ‘to bake’, *virti* ‘to boil’. They belong to yet another small and semantically heterogeneous inflectional class, sharing with the *j*-verbs the Past stem, but lacking any affix in the Present stem: Present *dega*, Past *degė*. Since these verbs conform to both prototypes in their different senses, which fail to be formally differentiated (unlike such pairs as *linkti/lenkti* ‘to bend (intr/tr)’), it is not very surprising that they belong to a morphological type distinct from those of canonical transitives and patientive intransitives. It is probably possible to consider their morphological properties as ‘iconically’ reflecting their ‘dual’ semantico-syntactic behaviour: ordinary transitive verbs have *j*-suffix in both stems, while labile verbs palatalize only the Past stem.

Notwithstanding possible semantic motivations for some members of the minor inflectional classes of Lithuanian ‘primary’ verbs, I believe that only the major classes, namely the *n/st*-class and the *j*-class, can be unequivocally characterized semantically.

5 Interim summary

In the preceding sections I have tried to show that inflectional class assignment with ‘primary’ verbs in Lithuanian is motivated by the semantic structure of these lexical items. The correlation between semantic features and inflection class may be seen in Table 2 (based on a list of ‘primary’ verbs with consonant-final roots taken from (Lyberis, 1962)). As the figures indicate, there is a statistically highly significant interdependency between semantic and morphological classes of ‘primary’ verbs in Lithuanian (especially with monadic verbs); moreover, it is possible to pin down single components of meaning responsible for inflectional class assignment:

(6) BECOME[STATE(x)] → *n/st*-class.

(7) ACT(x) → *j*-class.

	<i>j</i>	<i>n/st</i>	Other	Total
Transitive	247	8	51	306
Agentive intransitive	121	7	7	135
Patientive intransitive	7	237	4	248
Total	375	252	62	689

Table 2: The distribution of semantic and morphological classes of Lithuanian ‘primary’ verbs

If both components co-occur in the lexico-semantic representation of a verb and are predicated of the same participant, the conflict is resolved either by some sort of hierarchical ranking of these parameters (thus, for *kilti* ‘to rise’, which belongs to the *n/st*-class, the ranking is (6) > (7)) or by assigning the verb to some minor inflectional class (e.g., agentive telic *sėsti* ‘to sit down’ has neither palatalized stem-final consonant nor infix or suffix). Such variation is not unexpected, since it is in the non-prototypical cases that the least language-internal and cross-linguistic consistency of patterns usually shows up.

Thus, it is possible to conclude that inflection class membership among Lithuanian ‘primary’ verbs, especially in their intransitive subset, has a clear, although not a 100 %, semantic motivation.

6 Typological perspective: Georgian

In order to see that the phenomena discussed above are not merely an idiosyncrasy of a language with highly irregular inflectional morphology, let us briefly look at the data from an

unrelated language with strikingly similar matches between lexical semantics and verbal morphosyntax, namely Georgian.

As is widely acknowledged (see (Vogt, 1971), (Harris, 1981), (Holisky, 1979, 1981), (Merlan, 1985), (Van Valin, 1990) for both descriptive generalizations and explanatory proposals), there are three major productive classes of verbs in Georgian, all of which are more or less homogeneously semantically motivated. The morphosyntactic properties of Georgian verbal classes are summarized in Table 3; they include subject agreement morphology (here are relevant only 3SgPresent, 3PIPresent, and 3PIAorist suffixes) and case assignment to subject and object in the Aorist tense.

Class	Case-marking	Agreement
I	Sb: Erg — Ob: Nom	-s — -en — -es
II	Sb: Nom	-a — -an — -nen
III	Sb: Erg	-s — -en — -es

Table 3. Verb classes in Georgian

Semantic properties of the verbs belonging to these classes may be outlined as follows (see (Harris, 1981) and (Holisky, 1981) for an extensive treatment; I consider only underived verbs):

Class I contains transitive (dyadic) verbs: *mok'lavs* 'to kill', *dac'ers* 'to write', *dagvis* 'to sweep smth out', *šek'eravs* 'to sew', *micems* 'to give' etc.

Class II mainly contains verbs denoting telic eventualities, among which are both patientive and agentive: *mok'vdeba* 'to die', *darčeba* 'to remain', *dadneba* 'to melt', *dadgeba* 'to stand up' etc.

Class III contains verbs denoting atelic eventualities; the range of meanings possible with these verbs resembles very much that of Lithuanian intransitive *j*-verbs:

(i) verbs of sound emission: *bzuk'unebs* 'to buzz', *laklakebs* 'to chat', *xorxocebs* 'to laugh loudly' etc.;

(ii) verbs of light emission: *bdɣrialebs* 'to glisten', *varvarebs* 'to flare', *rialebs* 'to twinkle' etc.

(iii) verbs denoting 'motion without displacement': *babanebs* 'to tremble', *trtis* 'to shake' etc.;

(iv) verbs denoting non-directed motion: *goravs* 'to roll', *xt'is* 'to jump', *curavs* 'to swim', *parpatebs* 'to flit' etc.;

(v) verbs denoting natural processes: *grgvinavs* 'to thunder', *tovs* 'to snow', *kris* 'to blow (of the wind)' etc.

(vi) verbs denoting activities with a human protagonist: *tamašobs* 'to play', *mušaobs* 'to work', *cek'vavs* 'to dance' etc.

Thus, verb classes in Georgian have well-grounded semantic motivation, which, moreover, is quite similar to that of Lithuanian *j*- and *n/st*-verbs. Besides, just as Lithuanian atelic verbs pattern with transitive verbs morphologically, so do their Georgian counterparts: it is evident from Table 3 above that classes I and III share agreement morphemes (however, these verbs are dissimilar in other important morphological respects).

This evident similarity in the semantic properties of verbal classes in two unrelated languages which have never been in any contact cannot be accidental and must be motivated by cross-linguistically valid or even universal patterns linking lexical semantics, argument structure and morphosyntax (see (Lazard, 1985), (Van Valin, 1990), (Verhaar, 1990), (Mithun, 1991), (Levin and Rappaport Hovav, 1995), (Kibrik, 1997), (Croft, 1998), (Alexiadou et. al (eds.), 2004) for various attempts at explaining such and similar cross-linguistic similarities).

7 Summary and conclusions

In this paper I hope to have shown that all idiosyncrasies notwithstanding, it is possible to arrive at a fairly reliable predictability of inflection class of a Lithuanian 'primary' verb on the basis of its lexical semantics. Certainly, there is no exact 100 % matching between semantic features and morphological properties, but the correlation is nevertheless statistically highly significant.

Having compared Lithuanian data with that of a well-studied language, Georgian, I have argued that there is a striking and undoubtedly non-accidental similarity between verbal classes in these languages. Certainly, the Georgian verbal system is much more semantically transparent than that of Lithuanian; however, the verbal lexicon of both languages seems to be structured by the same semantic features, viz. agentivity/patientivity and telicity/atelicity.

What is also important to mention is the fact that the semantic parameters of inflection class assignment of intransitive verbs in Lithuanian and Georgian coincide with those usually regarded as determining the unaccusative vs. unergative classification of verbs, cf. (Van Valin, 1991), (Levin, Rappaport Hovav, 1995). Actually, with respect to Georgian it was argued by Harris (1981, 1982) on the basis of syntactic behaviour (e.g., case marking of sub-

jects) of verbs of Classes II and III, that the former are unaccusative, while the latter are unergative. While it will require further investigations to determine whether Lithuanian intransitive *j*-verbs are syntactically unergative, and *n/st*-verbs unaccusative (see (Timberlake, 1982) for attempts to discover unaccusative diagnostics for Lithuanian), it is already significant that morphological properties of Lithuanian verbs conform to typologically well-established patterns.

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