

# A case of linguistic change: Infinitives as predicatives

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## 1. Introduction

Infinitives pose special challenges for an explicit description of the interplay between lexicon, morphosyntax, and compositional semantics. This paper deals with forms that, morphologically, look like the infinitive of a verb. However, the use of these forms is quite specific. We argue that they do not belong to verbal paradigms but to the class of predicatives, i.e. a special subset of the lexicon, claiming that this is the result of linguistic change. The phenomenon is restricted to verbs of perception and cognition.

The case is illustrated by the Czech data in (1): what appears to be the infinitive of a perception verb combines with a form of the copula and a nominal expression.<sup>1</sup>

- (1) a. *Je vidět Sněžku.*  
is<sub>3SG</sub> see<sub>INF</sub> Sněžka<sub>ACC</sub>  
‘Mount Sněžka can be seen.’  
b. *Bylo slyšet hudbu.*  
was<sub>PAST.SG.N</sub> hear<sub>INF</sub> music<sub>ACC</sub>  
‘Music could be heard.’

Characteristically, the perceiver is suppressed and the sentences convey the modality of possibility. This is in contrast to sentences containing unsophisticated forms of perception verbs. These forms take a perceiver argument besides an expression denoting what is perceived. The relevant sentences lack the specific modal component in their interpretation, cf. (2a, b).<sup>2</sup>

- (2) a. *Turisté vidí Sněžku.*  
tourists<sub>NOM</sub> see<sub>3PL</sub> Sněžka<sub>ACC</sub>  
‘The tourists see Mount Sněžka.’  
b. *Sousedé slyšeli hudbu.*  
neighbours<sub>NOM</sub> hear<sub>PAST.PL</sub> music<sub>ACC</sub>  
‘The neighbours heard music.’

Sentences as in (1a) are impersonal as becomes obvious when we use the past tense, cf. (1b)—the copula shows default (non-agreeing) morphology. The nominal expression realizes accusative case, thus preserving the structural marking of the internal argument.

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<sup>1</sup> The properties of the construction in Czech are discussed by Porák (1959, 1962), Svoboda (1959) and Skoumalová (2003). See also Caha & Karlík (2005) who propose an analysis in a formal framework.

<sup>2</sup> Note that possibility can be entailed with perception, however, this is different from the claim that possibility is structurally determined.

Interestingly, Czech has a variant of the structure in (1) with a noun phrase bearing nominative case and an agreeing copula, cf. (3). Importantly, the interpretation of (1) and (3) is the same, no semantic – e.g., definiteness – or information structural effects arise.  $V < N$  is the neutral word order both in (1) and (3), whereas the order  $N < V$  needs in both cases contexts licensing topicalization. Thus we may assume the same relations for (1) and (3).

- (3) a. *Je vidět Sněžka.*  
            $is_{3SG}$   $see_{INF}$   $Sněžka_{NOM}$   
       b. *Byla slyšet hudba.*  
            $was_{PAST.SG.F}$   $hear_{INF}$   $music_{NOM.F}$

A further point that deserves mentioning is the fact that the apparent infinitives pattern with predicative expressions – e.g., predicatively used adverbs and adjectives, cf. (4a,b), respectively – in that they need a copula<sup>3</sup> in order to function as the predicate of the sentence. This property makes it clear that there exists a demarcation line between perception verbs, on the one hand, and predicatively used expressions of perception including apparent infinitives, on the other hand.

- (4) a. *Je vidno, že ...*  
            $is_{3SG}$   $visible_{ADV}$   $that$   
           ‘It is obvious that ...’  
       b. *Rozdíl je sotva slyšitelný.*  
            $difference_{NOM}$   $is_{3SG}$   $hardly$   $audible$   
           ‘The difference is hardly perceivable.’

We can summarize the observations as follows: the apparent infinitives in (1)/(3) are obviously related to perception verbs as in (2). To distinguish the former from the infinitives of the latter, we use the term Infinitive-like Perception Predicates (IPPs) for the former, glossing them, however, consistently as “inf” for ease of exposition. Sentences containing IPPs are modalized (modality of possibility). While perception verbs have two structural arguments, the IPPs have only one structural (internal) argument realizing accusative or nominative case. IPPs occur with two agreement patterns: (i) the copula exhibits default (non-agreeing) morphology when the complement of the IPP realizes accusative case, (ii) if the complement of the IPP bears nominative case, the copula agrees with that complement.

Constructions like (1)/(3) can be found cross-Slavically (see Fehrman & Junghanns 2008). The phenomenon brings up several issues of immediate interest from the synchronic formal perspective: the nature of the relation between IPPs and verbs of perception, the source of the modality, and the variation concerning case and agreement patterns observed. Importantly, all Slavic languages restrict the construction to a small group of predicates of perception and cognition. On the other hand, the languages differ in several respects (section 2), e.g., the case of the internal argument. A closer look at the diachrony reveals that the infinitive has undergone a series of changes over the time (section 3). The change from infinitival verb to predicative is essential for the analysis of the synchronic data (section 4). Based on the con-

<sup>3</sup> It is a form of the copular verb *byť*, not the auxiliary. See Toman (1980) and Veselovská (2008) for the distinction.

cept of linguistic change and its formal reflexes we sketch the development of the infinitive (section 5). Section 6 concludes the paper.

## 2. Cross-Slavic variation

Slavic languages<sup>4</sup> differ with respect to the forms used as IPPs. Some IPPs appear to be the only remaining form of an originally complete paradigm or are related to a more or less deficient paradigm (cf., e.g., BRu *vidac* ‘see’, Po *widać* ‘see’, *słychać* ‘hear’, Ru *slyxat* ‘hear’). In these cases, an IPP co-exists with a non-homonymous infinitive of a perception verb that has a complete paradigm of morphological forms (cf., e.g., BRu *bačyc* ‘see’, Po *widzieć* ‘see’, *słyszeć* ‘hear’, Ru *slyšat* ‘hear’). In Cz, Slk, and U Sorb, IPPs are always homonymous with the infinitive of the normal verb of perception (cf., e.g., for ‘see’ and ‘hear’, respectively, Cz *vidět* and *slyšet*, Slk *vidieť* and *počut*, U Sorb *widžeć* and *šłyšeć*).

We assume lexical relations between the IPPs and the normal verbs of perception – even if some IPP is not homophonous with the infinitive of the corresponding perception verb.<sup>5</sup>

Further variation concerns the case marking of the internal argument, the copula, and oblique realization of the experiencer.

Our survey of East and West Slavic concerning case variation is summarized in table 1. Two morphological cases show up – the accusative and the nominative.

	Ru	Ukr	Po	BRu	U Sorb	Cz
NOM	*	*	*	+	+	+
ACC	+	+	+	*	*	+

Table 1: Morphological case realized by the complement of the IPP

It turns out that the nominative as in the Cz examples (3a, b) is not as outstanding as one might assume. However, the other languages with nominative – U Sorb and BRu – do not allow the non-agreeing (impersonal) structure with accusative.<sup>6</sup> Examples illustrating the observed case patterns are given in (5)–(8).

- (5) *Iz okna vidat’ dorogu / \*doroga.* (Ru)  
 out-of window<sub>GEN</sub> see<sub>INF</sub> road<sub>ACC</sub> / road<sub>NOM</sub>  
 ‘Through the window one can see the road.’

<sup>4</sup> We use the following abbreviations: Cz Czech, Po Polish, Slk Slovak, U/pper Sorb/ian, Ru Russian, Ukr Ukrainian, BRu Belarusian.

<sup>5</sup> It is plausible to assume relations between all lexical items expressing perception – verbs, IPPs, adverbs, adjectives, etc.

<sup>6</sup> Slk seems to parallel Cz with regard to case and agreement patterns found with IPPs. A search in the Slk National Corpus (<http://korpus.juls.savba.sk>) reveals a considerable amount of agreeing structures with nominative. Nevertheless, this fact is not reflected in the grammars, which mention accusative as the only option, cf., e.g., Oravec & Bajžíková (1982:95).

- (6) *Stąd widać całą wioskę* / *\*cała wioska*. (Po)  
 from-here see<sub>INF</sub> entire<sub>ACC</sub> village<sub>ACC</sub> / entire<sub>NOM</sub> village<sub>NOM</sub>  
 ‘From here one can see the entire village.’
- (7) *Adhètul’ usja vëska* / *\*usju vësku vidac’*. (BRu)  
 from-here entire<sub>NOM</sub> village<sub>NOM</sub> / entire<sub>ACC</sub> village<sub>ACC</sub> see<sub>INF</sub>  
 ‘From here one can see the entire village.’
- (8) *Hora* / *\*horu je widžeć*. (U Sorb)  
 mountain<sub>NOM</sub> / mountain<sub>ACC</sub> is<sub>3SG</sub> see<sub>INF</sub>  
 ‘The mountain can be seen.’

Dialects in the East Slavic area seem to have allowed (and still allow) nominative with the complement of the IPP – just like modern BRu, as the following example from a 17th century theatre play suggests.<sup>7</sup>

- (9) *Muzyka za sto mil słyšať*. (Ru) (cf. Hrabě 1968:354)  
 music<sub>NOM</sub> prep hundred miles<sub>GEN</sub> hear<sub>INF</sub>  
 ‘The music can be heard from a distance of one hundred miles.’

In the modern East Slavic languages, there is generally no overt form of the copula in the present tense. The copula, however, shows up when a different tense is used, cf. (10) for Ukr. Although Po and Slk have overt present-tense copula forms used elsewhere, with IPPs, the present-tense copula is omitted in Po and optional in Slk.

- (10) *V jiji očax bulo znaty zadumu j žurbu*. (Ukr) (Shevelov 1960)  
 in her eyes<sub>LOC</sub> was<sub>PAST.SG.N</sub> know<sub>INF</sub> gloom<sub>ACC</sub> and sorrow<sub>ACC</sub>  
 ‘Her eyes revealed thoughtfulness and sorrow.’

Finally, some languages allow oblique realization of the experiencer – a dative noun phrase (East Slavic languages) or a PP (U Sorb).

- (11) *Tut i rěčka tabe vidac’ [...]* (BRu) (Jakub Kolas: *Kamen’*)  
 here also river<sub>DIM.NOM</sub> you<sub>DAT</sub> see<sub>INF</sub>  
 ‘Here you can also see the small river [...].’
- (12) *Hora beše za nas derje widžeć ...* (U Sorb)  
 mountain<sub>NOM</sub> was<sub>3SG</sub> for us well see<sub>INF</sub>  
 ‘We could see the mountain well.’

Thus, the two options for structures involving IPPs in Cz (IPPs with an accusative complement in an impersonal construction vs. IPPs with a nominative complement in a personal construction) have counterparts in the other Slavic languages considered. Importantly, regardless

<sup>7</sup> From *Russkaja demokratičeskaja satira 17 veka*. As the everyday spoken language is often imitated in theatre plays, we assume the data may reveal dialectal features as opposed to the norm of the standard language.

of the surface case, the nominal expression is the internal argument of the IPP (underlying object). Thus in languages with Genitive of Negation (GoN), this case (accusative or nominative) alternates with genitive in the presence of sentential negation (see section 4).

### 3. Diachrony

#### 3.1. Proto-Indo-European and Proto-Slavic

Constructions with copula and infinitive are assumed to originate from Proto-Indo-European (Proto-IE) personal constructions, where the copula agreed with a nominal expression realizing nominative case (cf. Vondrák 1908, Zubatý 1909). It is generally assumed that the IE infinitive goes back to the dative of an *ī*-stem verbal noun, i.e. that the infinitive was the (dative) case form of a (verbal) *noun*. The case form is said to have had adverbial semantics.<sup>8</sup> Thus the infinitive was not truly verbal but nominal by nature. It was used with the copula to be predicated of the (nominative) subject.<sup>9</sup> Modality of possibility, necessity, obligation was involved, cf. Vondrák (1908:416).

The linguistic evidence that we have for Late Proto-Slavic<sup>10</sup> is from Old Church Slavonic (OCS), where IPPs are attested, cf. Vondrák (1908:416–417) and Večerka (1996: 105–106, 239).<sup>11</sup> Importantly, the IPP assigns to its complement accusative, a structural case. It alternates with the genitive when the sentence is negated (GoN). The situation is identical to the one that we find with a transitive verb and its object.

- (13) *ne otъ sego že tьčьjъ jestъ viděti silъ xristosovъ* (OCS)  
 neg from this<sub>GEN</sub> prtcl only is<sub>3SG</sub> see<sub>INF</sub> power<sub>ACC</sub> Christ<sub>POSS-ADJ.ACC</sub>  
 ‘But not only from this can one see the power of Christ.’  
 (*Codex Suprasliensis* 413, 15–17; cf. Večerka 1996:106)

<sup>8</sup> Vondrák mentions the dative of purpose, unifying the functions of infinitives (originally: dative verbal nouns) and abstract nominals realizing a dative of purpose.

<sup>9</sup> The nominative with the “verbal noun” infinitive has to be distinguished from the nominative co-occurring with the IPP – a later development. See below on West Slavic and see the preceding sections for synchronic data.

<sup>10</sup> Following Lamprecht (1987) we adopt the term Late Proto-Slavic for the last stage of the Slavic linguistic unity (around 700 to 1000 of our era). See Trunte (2005: 235) for a discussion of Lamprecht’s ideas. See also Schenker (1993) on Proto-Slavic.

<sup>11</sup> “Old Church Slavonic is the language extrapolated from a small corpus of probably late tenth-century copies, mainly of translations made about a century earlier of Greek ecclesiastical texts” (Huntley 1993:125). Interestingly, perception infinitives combined with the copula do not occur in the gospel texts, as pointed out by Vondrák (1908:416) and confirmed by our corpus search. However, the construction frequently occurs, e.g., in the *Codex Suprasliensis* from the 10<sup>th</sup>/early 11<sup>th</sup> century. This is a monument consisting of texts – lives of saints, legends, etc. – to be read on each day of the month of March.

- (14) *da jemu ne bȋdetъ viděti golъ prъsijъ* (OCS)  
 so-as-to him<sub>DAT</sub> neg will-be<sub>3SG</sub> see<sub>INF</sub> naked<sub>GEN.PL</sub> breast<sub>GEN.PL</sub>  
 ‘in order that he should not see the naked breast’

(*Codex Suprasliensis* 187, 9)

- (15) *glasa že jemu ne běaše slyšati* (OCS)  
 voice<sub>GEN</sub> prtcl him<sub>DAT</sub> neg was<sub>IMPERF.3SG</sub> hear<sub>INF</sub>  
 ‘But his voice could not be heard.’

(*Codex Suprasliensis* 116, 26; cf. Večerka 1996:106)

Obviously, the infinitive is not a verbal noun any longer, in contrast to what was claimed for the Proto-IE stage. Rather, it has acquired properties that make it more similar to a (transitive) *verb*, becoming a part of the verbal paradigm. As an IPP, the infinitive appears in a specific syntactic position – it combines with the copula to form the predicate in an impersonal construction (generalized statement). A dative of the perceiver may occur, cf. (14). The sentences have modal meaning (possibility / impossibility)<sup>12</sup>.

Although Vondrák speculates that the construction was originally personal in the earliest stage of Slavic, examples of that type (i.e., with a nominative, an agreeing copula and the infinitive of a perception verb) are not attested, cf. (Večerka 1996:106). Nevertheless, we have to bear in mind that the “verbal noun” infinitive and the newly developed infinitival verb may co-exist in Late Proto-Slavic. That is to say that we have to be aware of potential syncretism (homophonous forms).

### 3.2. West Slavic

Trávníček (1958) points out that the infinitive had not yet become verbal throughout in Old Czech. His examples as in (16)–(17) from the second half of the 14<sup>th</sup> century contain nominal expressions agreeing with a predicatively used adjective, while the infinitive is claimed to be an adverbial adjunct, unable to take a complement (an internal argument). The parallel to the assumptions made with respect to the overall development of the IE infinitive is obvious: only when infinitives undergo “verbalization” can they take accusative objects.<sup>13</sup>

- (16) *(dívka) je přemluviti pracna* (Old Cz)  
 girl<sub>NOM.SG.F</sub> is<sub>3SG</sub> persuade<sub>INF</sub> laborious<sub>NOM.SG.F</sub>  
 ‘The girl is hard to persuade.’

(*Legenda o sv. Kateřině*; cf. Trávníček 1958:170–173)

- (17) *čistota je všem liba slyšeti* (Old Cz)  
 cleanness<sub>NOM.SG.F</sub> is<sub>3SG</sub> all<sub>DAT</sub> pleasant<sub>NOM.SG.F</sub> hear<sub>INF</sub>  
 ‘Decent things are pleasant to hear.’

(*T. Štítný ze Štítného*; cf. Trávníček 1958:170–173)

<sup>12</sup> Note that in contrast to Večerka (1996), Vondrák (1908:416) does not restrict the modality to possibility / impossibility (*man kann, man soll sehen* ‘one can, one shall see’).

<sup>13</sup> Note that modern Cz variants of (16)–(17) would be obligatorily non-agreeing. In modern Cz, the nominal expression originates as the internal argument of the infinitival verb realizing accusative case and may be topicalized. The (predicative) adjective has the default 3rd sg neuter ending.

Importantly, infinitives of perception verbs taking accusative objects are attested in Old Cz, whereas the nominative is not attested. The examples date from the 2<sup>nd</sup> half of the 14<sup>th</sup> c.:

- (18) *Viec jich nevidati.* (Old Cz)  
 more<sub>ADV</sub> them<sub>GEN</sub> NEGsee<sub>INF</sub>  
 ‘One cannot see them any more.’

(*Gesta Romanorum*; cf. Porák 1962:1)

- (19) *Neb tam teprv zřetlně viděti jest vůli boží.* (Old Cz)  
 as there first clearly see<sub>INF</sub> is<sub>3SG</sub> will<sub>ACC</sub> of-god  
 ‘as only there one can clearly see God’s will.’

(*T. Štítný ze Štítného*; Diakorp)

According to Porák (1962:4), IPPs with a nominative complement – cf. (3) – are a relatively recent development. Only few cases are attested in older literature (beginning from the 17<sup>th</sup> c.), a number of examples may be found in records of dialectal speech. It seems that the construction occurs in printed fine literature only starting from the beginning of the 20<sup>th</sup> c.<sup>14</sup>

Note that synchronic structures containing IPPs with a nominative complement involve infinitives after the process of “verbalization”, hence the nominative that is the complement of the IPP cannot be the one found with “verbal noun” infinitives as assumed for Proto-IE and Old Czech.

### 3.3. East Slavic

Borkovskij (1968:152ff) classifies copula+perception infinitives in the history of East Slavic as impersonal constructions. As such, the complement of the infinitive has to have accusative case. GoN occurs in the presence of sentential negation.

- (20) *i bě viděti na zemli čl̑vky [...]* (Russian Church Slavonic)  
 and was<sub>AOR.3SG</sub> see<sub>INF</sub> on earth men<sub>ACC.PL</sub> (*o*-stem noun)  
 ‘And men were seen on earth [...]’  
 (*Žitie Feodosija Pečerskogo*, l. 39g, late 12<sup>th</sup> c.; cf. Borkovskij 1968:153)

- (21) *v našem vozraste togo bylo ne slyšati* (Old Russian)  
 in our age that<sub>GEN</sub> was<sub>PAST.SG.N</sub> neg hear<sub>INF</sub>  
 ‘We haven’t heard that in our age.’  
 (*Povesti o vzjatii Azova*, mid-17<sup>th</sup> c.; cf. Borkovskij 1968:154)

<sup>14</sup> Porák (1962:5) concludes: “The construction was certainly used in the spoken language, but forced its way into the written language on a significant scale only recently.” One factor that played a role in the process was the fact that the use of the nominative was stigmatized by normative grammars, cf. Berger (in press).

- (22) [*I koli devka videla svoju gosudarynju umerluju, ona počala plakati i drati lice svoje*]  
 ‘And when the girl saw her dead mistress, she started to cry and scratch her face’  
*i bylo ee čuti velmi daleko.* (“West Russian”)  
 and was<sub>PAST.SG.N</sub> her<sub>ACC</sub> hear<sub>INF</sub> very far  
 ‘and one could hear her from far away’

(*Povesti o vitjazjax*, p. 6; cf. Borkovskij 1968:154)

Karskij (1956) analyses relevant examples from older stages of Belarusian as “sentences expressed solely by a predicate”, i.e. impersonal. The complement of the infinitival predicate realizes accusative case alternating with the genitive in negated sentences. The accusative occurs in the BRu saying in (24) preserving features of older stages of the language.

- (23) *dabra nie čuvać* (BRu) (cf. Karskij 1956:318)  
 good<sub>GEN</sub> neg hear<sub>INF</sub>  
 ‘one cannot hear anything good’

- (24) *vidac’ pana pa xaljavax* (BRu)<sup>15</sup>  
 see<sub>INF</sub> gentleman<sub>ACC</sub> prep boot-legs<sub>LOC.PL</sub>  
 ‘A gentleman is known by his high boots.’

Nevertheless, use of the “verbal noun” infinitive is attested in the oldest stage of East Slavic.<sup>16</sup> Compare the following example cited by Potebnja (1958).

- (25) *Est’ bo razsělina ta na kameni tom znat’*  
 is<sub>3SG</sub> prtcl crack<sub>NOM</sub> that<sub>NOM</sub> on stone<sub>LOC</sub> that<sub>LOC</sub> know<sub>INF</sub>  
*i do dnešnjago dni*  
 prtcl until present<sub>GEN</sub> day<sub>GEN</sub>  
 ‘But the crack can be seen on that stone even until today.’  
 (*Chož(d)enie Daniila igumena*, beginning of 12<sup>th</sup> c.; cf. Potebnja 1958:404)

The most important conclusion to be drawn from diachrony is that what morphologically looks like the infinitive has undergone considerable change over the time: it started as a verbal *noun* and became an infinitival *verb*. The infinitives of verbs of perception and cognition

<sup>15</sup> Interestingly, there exists another, very similar, saying in BRu where the relevant noun phrases (*sokal* (m) ‘hawk’, *sava* (f) ‘owl’) realize nominative case: *vidac’ sokal pa palětu, a sava pa pahlědu*. Nominative occurs with IPPs in the modern language, cf. section 2.

<sup>16</sup> Old Ru had a nominative+infinitive construction conveying the modality of necessity, as in (i). This construction survived in some North Ru dialects (cf., e.g., Kiparsky 1969). The standard claim (cf. Miklosich 1883:346, a.o.) is that the construction goes back to the “verbal noun” infinitive, cf. 3.1. above. Mendoza (2009) presents a different explanation. She argues that the nominative object is induced by linguistic contact with Finnish dialects. Be that as it may, we consider the development of this construction as orthogonal to the development of IPPs, see also fn 22 on so-called Main Clause Infinitives in the modern East Slavic languages.

(i) *Zemlja paxat.*  
 land<sub>NOM</sub> plow  
 ‘It is necessary to plow the land.’



developed into *IPPs*. Infinitives and IPPs coexist synchronically, but diachronically, there was a temporal overlap of all three items.

## 4. Analysis

The core idea of our analysis is the assumption that IPPs are predicatives. This is to say that an IPP is not an infinitive belonging to a verbal paradigm but an item with specific categorial features that make it a member of the class of predicatives, i.e. a special subset of the lexicon.

Using Praed<sup>17</sup> as the symbol of the relevant syntactic category, we analyze the structure of a sentence with an IPP as follows (irrelevant details omitted):

- (26) [CP ... OP ... [VP [V je] [PraedP [Praed vidět] [DP Sněžk- ]]]]  
           modal operator                      copula                      IPP                      complement

Praed takes a complement DP projecting a PraedP. The copula selects PraedP projecting a VP. Above the VP there is the usual functional structure of the clause consisting minimally of the heads T and C and their respective phrases.<sup>18</sup>

The following observations corroborate our claim that IPPs are predicatives: (i) An IPP needs a copula<sup>19</sup> to function as the predicate of the sentence. (ii) IPPs pattern with other expressions that are used predicatively (see section 1). (iii) IPPs are restricted with regard to aspect. They derive from imperfective verbs only. Sentences containing IPPs receive a stative interpretation. Stativity / genericity may be a major factor for the possibility to leave out the copula in the present tense.<sup>20</sup>

Since IPPs can be modified by adverbs, the predicative must be a lexical syntactic category, not a functional one. The fact that IPPs have descriptive content points in the same direction.

<sup>17</sup> See also Junghanns & Lenertová (2008), who discuss the analysis of the synchronic data in more detail. In order to prevent possible misunderstandings, we should like to add the following explanations: “Predicative” is just a descriptive term. “[+Praed]” is a categorial feature. It subclassifies the lexicon (see below). Items from various word classes can become a predicative and, thus, have the [+Praed] feature. As a category label “Praed” is a symbol for (abbreviated name of) a syntactic category. It is not quite correct to use Praed for both IPPs taking an accusative complement and IPPs taking a nominative complement since they are not identical with respect to their categorial features (see below). This is neglected here. Below we will make a distinction between Praed-1 – [+V,+N,+Praed] items – and Praed-2 – [-V,+N,+Praed] items. The best way, however, would probably be to use just the categorial feature matrices instead of category symbols, but this, of course, would be cumbersome.

<sup>18</sup> As will become clear below, we can make do with just the one structure that is given in (26). It covers both IPPs taking an accusative complement and IPPs with a nominative complement. Here, we differ from Caha & Karlík (2005) who propose two different structures for the two complementation patterns.

<sup>19</sup> In the literature, though, the item is sometimes referred to as auxiliary (cf. Kibort 2006). Once it is recognized that the IPP is a predicative, the assumption of a copula is without problem.

<sup>20</sup> Absence of the present-tense copula in some languages (cf. section 2) is attested not only in IPP structures but also elsewhere in Slavic. One has to distinguish paradigmatic gaps in East Slavic from drop of an existing present-tense 3rd sg form in Po and Slk.

- (27) *V poslední řadě bylo zpěvačku málo slyšet.* (Cz)  
 in last<sub>LOC</sub> row<sub>LOC</sub> was<sub>PAST.SG.N</sub> singer<sub>ACC</sub> little<sub>ADV</sub> hear<sub>INF</sub>  
 ‘In the last row the singer could hardly be heard.’

With respect to their function IPPs resemble (predicatively used) adjectives (which, in turn, are similar to verbs, cf. Geist 2006). Hence, we assume the categorial features [+V,+N]. This, however, is not a sufficient characterization of IPPs. We suggest to use [+Praed] as additional categorial feature. It serves to subclassify the lexicon of a language, capturing the fact that items from various word classes can become predicatives. Also, [Praed] prevents attributive use of IPPs, which is excluded. Consequently, the categorial features are as follows:

- (28) [+V,+N,+Praed]

This is the default categorial characterization of an IPP. Let us call the corresponding syntactic category Praed-1.<sup>21</sup> We claim that IPPs result from a lexical conversion process applying to infinitival verbs and replacing the original [+V,-N] features.<sup>22</sup>

Lexical conversion brings about semantic changes. A major change can be detected when one compares the argument structure (AS) of the verb that the IPP derives from with the IPP’s AS. Whereas the internal argument is preserved<sup>23</sup> so that an underlying object can be realized, the external argument of the original verb gets blocked. Thus, canonical realization of the experiencer is excluded. (29) contains the semantic representation of a perception verb. (30) illustrates a change in the AS that is brought about in the course of lexical conversion.

- (29)  $\lambda y \lambda x \lambda e [e \text{ INST } [x \text{ PERCEIVE } y]]$

NB: Here, “PERCEIVE” is a place holder for the relevant semantic predicate, e.g., “SEE” or “HEAR”. The INST(ANTIATION) functor maps the proposition “[x PERCEIVE y]” to the individual “e”. “e” is the event variable. (We do not distinguish between e(vents) and s(ituations).) “x” and “y” are variables that correspond to the two structural arguments – the perceiver and the perceived, respectively. See Bierwisch (1990) for the format of representation.

- (30)  $\lambda y \lambda e [e \text{ INST } [z \text{ PERCEIVE } y]]$

As can be seen, the variable x gets replaced by z. There is no lambda operator binding z. Thus the external argument is blocked. It cannot be realized in syntax. The unbound variable z re-

<sup>21</sup> Below we will argue that IPPs can undergo further development leading to a modification of their feature specification. To distinguish the two types of IPPs, we will use Praed-2 as category name for the IPPs with the new feature matrix.

<sup>22</sup> Thus, we distinguish between the IPP construction and so-called Main Clause Infinitives (MCIs, non-embedded infinitival clauses). MCIs are abundant in the modern East Slavic languages and were attested in older stages of West Slavic as well. MCIs are not restricted as to semantic type of verb and type of modality. So whereas we assume that MCIs involve true infinitives (i.e. verbs), IPP structures do not. If our assumptions are correct, IPPs belong to the lexical class of predicatives that is different from verbs.

<sup>23</sup> See Geist (2006: 139–140) on the parallel between verbs and predicatively used adjectives with respect to complementation.

mains a semantic parameter.<sup>24</sup> There remains only one single argument for realization in syntax, viz. the internal argument. It surfaces as direct object provided the IPP is able to assign accusative case (Praed-1). An impersonal construction results.

The impossibility to bind anaphorical elements is evidence for blocking of the external argument, cf. (31) taken from Caha & Karlík (2005).<sup>25</sup> Observe that with normal infinitives, such binding is allowed, cf. (32).

- (31) \**Je se vidět.* (IPP, Cz)  
       is<sub>3SG</sub> refl see<sub>INF</sub>  
       Intended meaning: ‘It is possible to see oneself.’

- (32) *Vidět se je možné.* (infinitival verb, Cz)  
       see<sub>INF</sub> refl is<sub>3SG</sub> possible  
       ‘It is possible to see oneself.’

Although the external argument is blocked, some languages still allow oblique realization of this argument (cf. section 2). Following Grimshaw (1990) we analyze an expression that is the oblique realization of a blocked argument as an argument-adjunct.<sup>26</sup> For those languages that do not allow oblique realization of the external argument, we assume that the dummy variable replacing the relevant variable gets bound in the process of conversion by an appropriate operator making the dummy inaccessible.

Sentences that contain an IPP convey modal meaning – modality of possibility (affirmative sentences) or impossibility (negated sentences). The modal component can be integrated into the meaning representation of the sentence in different ways.<sup>27</sup> One option is to regard the modal component as another semantic change accompanying the lexical conversion process. Accordingly, the lexical item acquires a POSS-component during its change from infinitival verb to predicative.<sup>28</sup> The result of this step is shown in (33):

- (33)  $\lambda y$  [POSS [e’ INST [z PERCEIVE y]]]

Now the meaning representation of the predicative contains the POSS-component. A second effect consists in replacement of e by e’. Since e’ is not bound by a lambda operator, the resulting item is no longer a verb.<sup>29</sup>

<sup>24</sup> This captures the fact that, in principle, any person can be the perceiver. Observe the similarity to other structures (passive sentences, impersonal expressions) where the external argument is affected too.

<sup>25</sup> Kibort (2006) makes a similar point for Po.

<sup>26</sup> A dative experiencer (oblique realization of the blocked external argument) may bind an anaphor. Data from the East Slavic languages point in that direction. For reasons of space, we cannot discuss this here.

<sup>27</sup> The source of modality was already discussed by Caha & Karlík (2005).

<sup>28</sup> The effect is brought about by a template applying to the meaning representation of the verb. We assume the following semantic representation of the template:  $\lambda Q$  [POSS [Q e’]]

<sup>29</sup> e’ remains a semantic parameter. It can be interpreted at Conceptual Structure (cf. Bierwisch 1986) only (via inferences etc).

Integrating the POSS-component into the lexical meaning of the IPP leads to a problem. Though modality of possibility is part of the meaning of the vast majority of sentences that contain an IPP, in some contexts modality is absent from the meaning of the sentence. (34a) may be stated in a context where one indeed smells smoke. Importantly, a paraphrase as in (34b) cannot be used then (cf. also Svoboda 1959 for discussion):

- (34) a. *Je cítit kouř.* (Cz) (cf. Svoboda 1959)  
           ‘It smells like smoke.’  
       b. *Je možné cítit kouř.*  
           ‘It is possible to smell smoke.’

This problem can be overcome by treating POSS not as a component acquired by IPPs in the process of lexical conversion, but as a separate syntactic item – a modal operator – contributing its POSS-semantics when the meaning of the sentence is composed. In those cases where the sentence does not receive a modal interpretation, the POSS-operator is not involved in structure building and, thus, compositional semantics. The technical details for the modalized sentences have to be adapted for the POSS-operator contributing separately to the meaning of the sentence.

(35a) contains the simplified meaning representation of the VP. (35b) is the meaning representation of the POSS-operator. (35c) illustrates the result of applying the meaning representation of the POSS-operator (functor) to the meaning representation of the VP (argument).

- (35) a.  $\lambda e [e \text{ INST } [e' \text{ INST } [z \text{ PERCEIVE } [\text{MOUNT SNĚŽKA}]]]]$   
           Semantically, the copula combines with a proposition. “ $\lambda e \dots e$ ” corresponds to the event variable provided by the copula. “ $e' \text{ INST}$ ” is a remaining meaning component of the original infinitival perception verb. Replacement of the original verb’s event variable by  $e'$  is achieved together with the operation blocking the experiencer argument. Observe that the variable  $e'$  is not bound, hence  $e'$  has the status of a semantic parameter. Only at Conceptual Structure can the relation to a perception event (or perception events) be established.  
       b.  $\lambda P \lambda e [\text{POSS } [P \ e]]$   
       c.  $\lambda e [\text{POSS } [e \text{ INST } [e' \text{ INST } [z \text{ PERCEIVE } [\text{MOUNT SNĚŽKA}]]]]]$

As can be seen, the “POSS”-component is of semantic type  $\langle t, t \rangle$ .

Theoretically, there is a third option, viz. analyzing the copula as the source of modality (cf. von Stechow 2004 for German). However on the one hand, this would add another copula to the already existing types, leading to a proliferation of the lexicon. Moreover on the other hand, we would have to assume two copulas for structures involving IPPs to capture both modal and non-modal cases. Thirdly, it would be hard to explain why a copula can be null in the present tense when it has modal, i.e. substantial, semantics.

Finally, we would like to discuss the case patterns to be observed with IPPs, as surveyed in section 2. We claim that a  $[+V, +N, +\text{Praed}]$  predicative (Praed-1) is able to assign accusative case to its single (internal) argument. This can be taken to be a property inherited

from the original verb.<sup>30</sup> Since agreement need not, and in fact cannot, be established, default agreement shows up, marking the expression as impersonal.<sup>31</sup>

We further claim that IPPs can undergo a change from [+V,+N,+Praed] to [-V,+N,+Praed], a kind of nominalization process. [-V,+N,+Praed] predicatives (Praed-2) are not able to assign accusative case to their complement. The syntactic derivation is saved by an abstract agreement relation between the T(ense) head and the IPP's complement. Consequently, the complement has nominative case at the surface. In the resulting personal sentence, there is overt agreement between the nominative DP and the copula.

Note that the underlying syntactic configuration is the same with both patterns. The difference lies in the [+V] vs. [-V] specification of the predicative (Praed-1 vs. Praed-2). We expect that GoN occurs irrespective of whether accusative or nominative case is realized in the affirmative counterpart of the negated sentence. This is borne out by the facts.<sup>32</sup>

- (36) a. *Za ścianą było słychać muzykę.* (Po)  
 behind wall<sub>INSTR</sub> was<sub>PAST.SG.N</sub> hear<sub>INF</sub> music<sub>ACC</sub>  
 b. *Nie było słychać muzyki.*  
 NEG was<sub>PAST.SG.N</sub> hear<sub>INF</sub> music<sub>GEN</sub>
- (37) a. *Čuvac' byw kryk.* (BRu)  
 hear<sub>INF</sub> was<sub>PAST.SG.M</sub> cry<sub>NOM.SG.M</sub>  
 b. *Kryku ne bylo čuvac'.* (cf. AG86, §202.5, p. 224)  
 cry<sub>GEN</sub> NEG was<sub>PAST.SG.N</sub> hear<sub>INF</sub>

IPPs as they are found in the modern Slavic languages obviously display various stages of the process converting infinitival verbs into predicatives. Ru, Ukr, and Po have [+V,+N,+Praed] IPPs (Praed-1) taking an accusative complement in an impersonal construction (resulting state I). BRu and U Sorb have [-V,+N,+Praed] IPPs (Praed-2) that are unable to assign accusative so that the complement needs to enter an agreement relation that is indicated by nominative case and agreement morphology (resulting state II). Cz and Slk have both types, as is evidenced by the fact that the two patterns occur simultaneously. See section 2. The accusative (impersonal) pattern is older than the nominative (personal) pattern. See the diachronic data presented in section 3.<sup>33</sup>

<sup>30</sup> The ability to take a complement and assign case to it is a property that Praed-1 shares with predicatively used adjectives. On the latter, see Geist (2006).

<sup>31</sup> The structure violates Burzio's Generalization in that accusative case is possible without external selection. In the Slavic languages, further anti-Burzio structures can be found. This, however, goes beyond the scope of this paper.

<sup>32</sup> Since the GoN is archaic in modern Czech, we use Polish and Belarusian examples to illustrate the point.

<sup>33</sup> The development that is relevant here is the one that affected infinitives after the so-called "verbalization", not the "verbal noun" infinitives.

## 5. Linguistic change

Our survey of synchronic data from West and East Slavic languages (see sections 1 and 2) as well as the history of the infinitive in Slavic (see section 3) has led us to two major insights: (i) There is variation in the modern Slavic languages with respect to certain aspects of structures involving IPPs, the most important being case (interrelated with agreement). (ii) The form that is usually referred to as “infinitive” has been undergoing a series of changes in its history. We claim that the state of affairs concerning IPP-structures as found in the modern Slavic languages reflects a development that affected the infinitive as part of the verb’s paradigm and converted it into an item belonging to a specific lexical class (predicatives).<sup>34</sup> Thus, we assume a tie between the diachrony of the infinitive (specifically, the resulting states of the development), on the one hand, and, on the other, the specific properties of IPP-constructions in the various languages investigated.

Based on our insights, we can sketch the development as follows: Initially, the infinitive is the case form of a verbal noun (“verbal noun” infinitive). Having undergone “verbalization” the infinitive became a part of the verbal paradigm – the second stage. Lexical conversion affecting infinitives of verbs of perception and cognition turned those infinitives into predicatives – the third stage. For the latter, we distinguish two sub-stages – in chronological order: (a) [+V,+N,+Praed] – items of verbal descent that are close to predicatively used adjectives, (b) [-V,+N,+Praed] – a “nominalized” version of the (a)-type items and hence similar to predicatively used nouns.

Our analysis (cf. section 4) rests on the assumption that IPPs are lexical items resulting from the conversion process as described above. IPPs taking an accusative complement have the categorial features [+V,+N,+Praed] – Praed-1. IPPs with a nominative complement are characterized as [-V,+N,+Praed] – Praed-2. The modern Slavic languages differ as to which of the predicative items they have developed. Cz happens to simultaneously have IPPs of both the [+V,+N,+Praed]-type and the [-V,+N,+Praed]-type.<sup>35</sup> It is a matter of speculation whether, eventually, one will completely replace the other. As can be seen, we are able to claim that the state of affairs concerning Cz IPPs simply reflects the various options made available by a process to be observed in other Slavic languages too. The fact that – apart from Cz (and Slk) – nominative complements of IPPs are found in other languages (U Sorb, BRu) too undermines attempts to exclusively explain the nominative as a phenomenon induced by linguistic contact.<sup>36</sup> Therefore, we think that our proposal has some plausibility to it.

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<sup>34</sup> This, of course, is not to say that the infinitive vanished as such. First of all, conversion exclusively affected the infinitives of verbs of perception and cognition, a small lexical group. Secondly, the item converted into a predicative can co-exist with the homonymous infinitive of a fully functional verbal paradigm (cf., e.g., Cz IPPs). Thirdly, even if the emergence of the predicative led to a decline and, eventually, “extinction” of the original verbal paradigm, there are morphologically and/or semantically related verbs that are used instead whose paradigm includes an infinitive that is not homonymous with the IPP (cf., e.g., Po *słychać* (IPP) vs. *słyszeć* ‘hear’ or BRu *vidac*’ (IPP) vs. *bačyc*’ ‘see’).

<sup>35</sup> The same seems to be true for Slk. However, normative grammars of Slk have ignored this fact so far.

<sup>36</sup> See, e.g., Berger (in press). He claims that German influence is behind the nominative occurring with Cz IPPs.

## 6. Conclusion

Our answers to the issues raised in section 1 are as follows:

IPPs derive from infinitives of perception verbs – a diachronic process of lexical conversion. Synchronically, an IPP is either homonymous with the infinitive that belongs to the paradigm of a fully functional perception verb or co-exists with a fully functional perception verb whose infinitive is non-homonymous with this IPP. In either case, the corresponding items are related via lexical rules.

Modality is best thought of as being integrated into the meaning of the relevant sentences independently of the IPP. We assume that an operator is merged in syntax contributing the component of modality of possibility in the process of amalgamating the semantic representation of the sentence.

There are two types of IPPs. They differ with respect to their categorial features, viz. [+V,+N,+Praed] vs. [-V,+N,+Praed]. The former, but not the latter, type of predicative is able to assign accusative case to its complement. Licensing of accusative case on the complement leaves the copula without a target for agreement. Therefore, default agreement shows up – the impersonal structure. By contrast, the complement of a [-V,+N,+Praed] predicative cannot realize accusative case. The structure can be saved only via abstract agreement between the complement and an appropriate functional head (Tense). The abstract agreement relation manifests itself as overt agreement between the copula and the complement realizing nominative case – the personal structure.

We regard the various options observed in the modern Slavic languages as resulting from different stages of the development those languages have gone through. The Acc/impersonal pattern represents resulting state I of the lexical conversion process turning what was an infinitive into a predicative. The Nom/personal pattern, on the other hand, corresponds to resulting state II reflecting a change from [+V] to [-V] that the predicatives may undergo (nominalization). Both stages can co-exist in a language.

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