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On TIME – The Incremental Compositionality of TEMPORALITY and Aspectuality*

1. Introduction

In this article, we will argue for the connection between different grammatical categories of TENSE, Aspect, temporal deictic position adverbials, and event structure¹ to express incrementally the compositionality of TIME in Russian and, by extension, Slavic simple clauses. We will leave the complication regarding the formal semantic notification of compositional meaning of the sentence (cf. Montague 1970a; Montague 1970b; Montague 1973; Bennett & Partee 1972; Partee 1973; Partee 1975; Partee (ed.) 1976; Partee & Hendriks 1997) for sake of comprehensibility aside (cf. on this Bittner 2014, whose book based on predicate logic and her formal semantic notification is only understandable for a small group of insiders). Doing this we may risk a portion of clarity but we win readers not comfortable or acquainted with formalisms and this is for the sake of the argument.

* This chapter on Time expressions was originally written for an encyclopaedia edited by Marc Greenberg et al. (eds.). Encyclopaedia of Slavic Languages and Linguistics Online. Editor-in-Chief Marc L. Greenberg. http://dx.doi.org/10.1163/2589-6229_ESLO_COM_032360, but is now published here. The new authors of the originally planned chapter are now separated into chapters five words each: Ivashina, Natal'ja. »Time (forthcoming)«. In Encyclopaedia of Slavic Languages and Linguistics Online. Editor-in-Chief Marc L. Greenberg, http://dx.doi.org/10.1163/2589-6229_ESLO_COM_039820 (first published online 2021), and Makarova, Anastasia. »Time Expressions«. In Encyclopaedia of Slavic Languages and Linguistics Online, Editor-in-Chief Marc L. Greenberg, http://dx.doi.org/10.1163/2589-6229_ESLO_COM_032360 (first published online 2020). The highly limited space, for me, was the reason, why this chapter has been withdrawn by myself deliberately. Still, I do not claim to cover all facets of the problem of Time. Taxis we have not really considered, i.e. the temporal relation or sequencing of times (lat. *consecutio temporum*) between coordinate and subordinate and main clauses (cf. the Ph.D. Thesis. of Khomitsevich [2007]). Dependencies across Phase or the work of Letučij (2010), including effects on Extraction phenomena of Inner Islands and Negation (cf. Kosta & Krivochen 2015), are also beyond of this chapter. These limits are reasonable and justified, the more so, that there is a chapter on Tense, Taxis and Aspect in Marc Greenberg et al. (eds.) (ESSL). It is also legitimate and necessary to refer to the principle of parsimony in the representation and the general intelligibility. Many aspects of the »aspect«, especially the recent discussion about a new classification of the Vendler classes of actional verbs, could not been taken into account. This includes also the argument-predicate structure and the distinction of countable and mass nouns as proposed in Mehlig (2012), or the problems of presupposition and negation with respect to the choice of ipf. vs pf. aspect, as given in Mehlig (1985). I am very grateful to Hans Robert Mehlig, Volkmar Lehmann and Marek Łaziński, the three reviewers of this chapter, for their valuable comments on this contribution.

1 It has been pointed out by one reviewer that the term »Aktionart« has not been explained beforehand. We prefer to use the term event structure instead of »Aktionart«, since, in the aspectology tradition, »Aktionart« includes just the lexical aspect and displays the semantic classes of verbs, better known as »action types«. In the following, we define Action types as semantic classes that serve to characterize and classify verbs. They are based on the temporal structure of an event expressed using a verb (taking into account the linguistic and non-linguistic context). Since we have chosen a syntactic model of Radical Minimalism (Krivochen & Kosta 2013; Kosta 2020) and compositional semantics of temporality, we will discuss the term »Aktionart« only briefly in chapter 5, here.

We will focus on the difference between the ontological or physical abstract entity »TIME« conceptualized by language in its grammatical and lexical potentials. The connection between the »internal TIME« (viewpoint of the speaker), thus, verbal aspect as a grammatical category in narrow sense, and the deictic TIME, thus grammatical TENSE², are particularly central and important in this take on the interrelation and division of labor between TEMPORALITY and aspectuality as the semantic side of grammatical encoded categories of the verb: TENSE and verbal aspect. A minimalist generative analysis based on syntactic considerations including the grammatical category of TENSE as head of its own projection (TENSE Phrase, TP) and verbal Aspect as the head of its own projection (Aspect Phrase, AspP) must include the contribution of temporal and aspectual adverbials which incrementally feed into the »Gesamtbedeutung« (in the sense of Jakobson's *Overall meaning* [cf. Jakobson [1932] 1971]). In addition to these key factors that play a crucial role in Slavic languages, we have included other important points that deal with grammatical research, particularly from a syntactic and semantic point of view. We checked the model by Reichenbach (1947) and Vendler (1967) for applicability to some Slavic languages and – using the example of the North / East / West / Slavic area group (illustrated here using the example of Ru for the North/East Slavic group, and Pl and Cz [for the North/West group]) – we have to state that neither Reichenbach's model, very well applicable for a TENSE language like British English, nor Vendler's model, reflect the colorful variety of expressions and especially the functions of the Slavic TENSE-aspect system. The notion of hybrid predicates to differentiate between hybrid Accomplishments with a Homogenous Activity Component vs hybrid Accomplishments with an Activity Component consisting of several randomly ordered subevents (fulfilling the cumulativeness of several sub-events) was a first step to stress the importance of a closer look at verbal semantics (we took this idea from Hans Robert Mehlig's most impressive idea in Mehlig 2012 and section 2.3.). But even this more consistent revision of Vendler (1967) did not suffice because a relatively consistent class of verbs (namely both Unaccusatives and Anti-Causatives) has not yet been analyzed under the approach of compositional semantics at hand. We have thus introduced our own theoretical approach based on the theory of Radical Minimalism (cf. Kosta & Krivochen 2014; Krivochen & Kosta 2013; and Kosta 2020), developing a theory of mapping semantics on syntax and vice versa. Doing this, we have tried to develop our own three-level theory of argument-predicate structure, the theta-role hierarchy, and the event structure from Kosta (2015) and Kosta (2020). But the extent to which everything was said that has to be said remains to be seen and may be the next one to leave to further reception and research.

2 We could not include the difference between deictic vs anaphoric tenses and narrative vs deictic tenses in order not to exceed the scope of the article. On this, cf. e.g. Dowty (1986). We also did not attempt any kind of cognitive rooted analysis in the way other researchers do. For this cf. e.g. the influential work of Laura Janda et al. 2013 or Steven Dickey 2000. We fully accept such an approach, but we have the freedom and will to represent a different tradition and direction of linguistics, namely Generative Grammar based on Radical Minimalism as represented in our theory (cf. Kosta & Krivochen 2012; Krivochen & Kosta 2013; Kosta 2015, and Kosta 2020).

2. General Remarks and Definitions on TIME in Language, TEMPORALITY and TENSE

»Time is a central aspect of our life and the entire universe. It is something inescapable: we are in Time, we cannot get out of Time. All of this applies equally to space, but Time is more abstract and therefore more puzzling, also for scientists.« With this quote, Vater (1991: 1) introduces his *Introduction to Linguistics of Time* (Zeitlinguistik), a book that is as fundamental as it is interesting for modern linguistics, since it sums up a wide variety of different types of disciplinary and interdisciplinary research on the problems of TIME and TEMPORALITY that are presented in a very clear manner.

Jachnow (1995) also distinguishes between TIME as a cognitively perceivable entity, attributable to reality, which can be measured psychologically, philosophically (epistemologically) or physically and materialistically, and separates this from TEMPORALITY, which is both the linguistic manifestation of different manifestations of TIME encoded in the language system as well as on the text level.

Contrary to Jachnow (1995) and Vater (1991), we assume a threefold model of TIME. TIME as a physical entity of the nature TIME, the mental reflex of this entity in the perception of human brains; TIME and TEMPORALITY as the composed meaning of all elements participating in the model of TIME as cognitive equivalent to its formal expressions TENSE; verbal aspect and lexical expressions of TEMPORALITY.

2.1 Structure and Objectives of this Article

Anyone who wants to get an idea of the situation of TEMPORALITY research in the context of Slavic languages or Slavic linguistics today will be confronted with a variety of different, sometimes quite heterogeneous theoretical, methodological, and heuristic approaches that would be difficult to classify into a closed research paradigm.

The task of this short insight can therefore not be to present a comprehensive, complete and exhaustive picture of TIME expressions. Since TIME is related to TENSE and Aspect, a restriction regarding the choice of topics must be made.³ Rather, we want to give an idea of the variety of tasks related to the TEMPORALITY problem in Slavic studies and beyond in the neighboring disciplines, insofar as it gives the »space and TIME« to offer, without claiming to be complete or even to resolve contradictions between the individual approaches or/and to be able to raise or even want to raise scientific positions, which are untenable.

To get an idea about present research strategies in the field of Time and TEMPORALITY research within the Slavia at least synchronously and partly already in terms of science history, in the

3 On general aspects of TIME, TEMPORALITY and TENSE cf. Jachnow & Wingender (eds.) 1995, and also Mehlig 1999. Aspect and TENSE are treated extensively in the Ph.D. Thesis of Dickey (2000) and (2018) and Lehmann (1999), forthcoming, and also in the chapter on Aspect of the above mentioned Encyclopaedia. A review and state of the art on TEMPORALITY is given in the long contribution by Kosta (1995), including the description of grammatical TENSE system and aspect in the eldest grammars of the Slavs, e.g. Zizaniij (1596), Adelphotes (1591), Smotryc'kyj (1619), Križanić (1666), and the first Russian grammars by Schwanwitz (1730), Adodurov (1731), Lomonosov (1755/77), and Barsov (1783–88). An excellent description of the TENSE system in Proto-Slavic, Church-Slavonic and South-Slavic languages cf. Migdalski (2006).

present article, we attempt to give a synchronous and partly also a diachronic cross-section by dealing with the question of Temporality in Slavic, with the result to create an image of facts, and raising unresolved problems therein, which future research on Expressions of Time may follow or will have to follow.

2.2 Concepts of TEMPORALITY and TIME (TENSE), Localization and Space in the Theory of Functional Grammar

TEMPORALITY and temporal deixis, first introduced by Bondarko (especially Bondarko 1971: 4ff) under the term »temporal'nost'«, alongside and together with the terms of temporal localization (»vremennaja lokalizovannost'«), the aspectuality (»aspektual'nost'«; see also Lehmann 1999) and the »taxis«, are semantic categories of TIME *as components of the so-called functional-semantic fields* (funkcional'no-semantičeskie polja).

After the conception of the representatives of functional grammar of the Leningrad-Sankt Petersburg school, TEMPORALITY is considered as a semantic category that contains an invariant core and several variant semantic characteristics and, together with other semantic-cognitive categories such as space (»prostranstvo«, »lokativnost'«), possessivity (»possessivnost'«), existentiality (»bytijnost'«), conditionality (»obuslovlennost'«), cause (»pričinnost'«), subjectivity (»sub'ektivnost'«), objectivity (»ob'ektivnost'«), communicative perspective of the utterance (»kommunikativnaja perspektiva vyskazyvanija«), determination (in-/definiteness) (»opredelennost'« / »neopredelennost'«), quality and quantity (»kačestvennost'«, »količestvennost'«) they all build up the core of the functional categories of Russian grammar. Semantic forms, or, better, onomasiological categories are represented in a hierarchical system of functional-semantic fields (cf. Bondarko 1987).

It is essential that in contrast to the grammatical Category of Tense in the Slav. (Ru), which is expressed in the grammar morphologically and syntactically on the verb/predicate, the semantic category of TEMPORALITY is, among other things, marked by its formal non-limitedness. This means that it can be implemented using any verbal means (morphological, syntactic, word-forming, lexical, phraseological) and in different ways (discrete / indiscrete, explicit / implicit, direct / indirect, linguistic / non-verbal or pragmatic-situational) (Bondarko 1987: 38). Significant for the semantic view of the Petersburg School around Bondarko is the overcoming of the »actionist« position and the emancipation of grammatical Tense, by giving attention to Temporality as an equal, but much broader semantic partner in addition to aspectuality, modality, personality, etc. This certain relativization of the form or even the distancing from it and the shift to function of the linguistic sign characterizes the paradigm of the functional orientation of the second phase of Leningrad functionalism, which should rather be given the label functionalism of the semantics.

3. Formal Expressions and Functions of TENSE and Aspect in Slavic

3.1 The East-West Area: Expressions of Verbal Aspect and TENSE

The Slavic languages have a very complex system for designating TIME relationships. As in all Indo-European languages, the means of expression represent a symbiotic system of aspect and TENSE correlation. It is striking that, typologically, there is an asymmetry between aspect and TENSE as a grammatical category of the verbal system, which is depicted both horizontally and vertically as well as spatially. Let us call the verbal Aspect »internal TIME«, because the events between perfective and imperfective verbs are represented as the subjective inner perspective of the speaker as s/he conceptualizes (»sees«) the event: either as a holistic concept, which can be represented as a single point on the TIME axis (perfective aspect), or as a line with no limit (imperfective aspect). Most of the East and West Slavic languages have a very differentiated system of verbal aspect, but a rather simple (impoverished) system of TENSE. Thus, every verbal class makes the distinction between an unmarked imperfective aspect, which can include states and activities (processes), and a marked perfective aspect, which can include events as achievements or accomplishments, but also as change from one state to another (inchoatives). The TENSES in all East- and Westslavic languages have an unmarked form present and simple past and simple future I. While the present form has only imperfective aspect in the meaning of durative or generic present, both past as well as future can have perfective and imperfective aspect.

3.2 The combination of Deictic TENSES and Aspect with Deictic Adverbials of TIME

In the following section, we will introduce some distinctions which are important in order to differentiate between clause bound adverbials, in which the category TENSE serves as Operator to bind its variables in its minimal domain, which we call c-command. Thus, a deictic adverb such as *včera* (»yesterday«) and, accordingly, any adverb which is relationally determined by the deictic relation between the Speech Moment/S and the TIME of the event E – are bound by the Operator in the position of the subject of a complex clause to establish the binding relation between the temporal Adverb and the Antecedent (cf. Fig. 1). The temporal Adverb *včera* is in the domain of a tensed finite phrase and must be D-linked from a position above the tensed phrase (Complementizer Phrase, CP) in the sense of Rizzi's Cartographic approach (Rizzi 1997): In that case, following the Linear Correspondence Axiom (LCA), introduced by Kayne (1994), the temporal Adverb must be in the ForcePhrase (in the Specifier position of a FocP) at LF, as it takes scope over the entire finite clause (FinPhrase) from the Operator position in SpecForceP (SpecCP), but, in the overt syntax for linearization reasons due to LCA, it appears as if it were right-adjoined to VP. But this is solely the representation of PF, cf. Fig. 1:⁴

4 Here, I refer to the usual terminology found in the minimalist models, e.g. Rizzi (1997), Kayne (1994), and Kosta (2020).

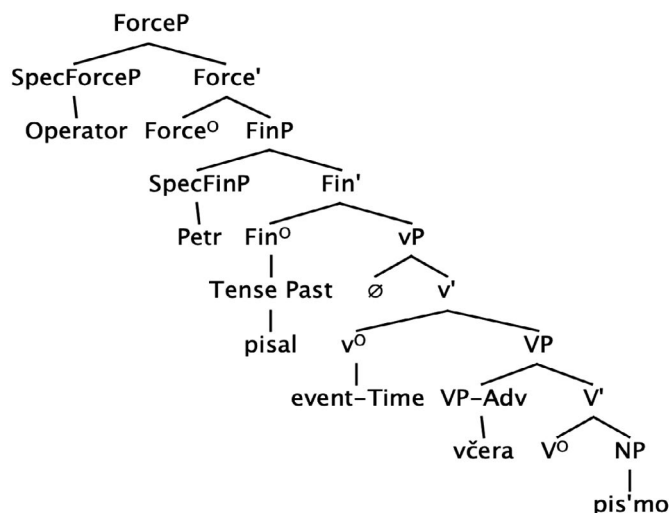


Fig. 1: Binding Relations between Temporal Adverbs and Antecedents in Complex Clauses.

Monika Rathert (2012: 238) differentiates between the following types of sentential adverbs of TIME and aspectual adverbs:

Sentential Adverbials of TIME:

A) Positional Adverbials

a. Anaphoric Adverbials: *three weeks ago, afterward*

b. Deictic Adverbials: *yesterday, tomorrow*

c. Clock-calendar Adverbials: *on May 1, 1999*

B) Quantificational Adverbials: *once, twice, often, seldom, sometimes*

C) Adverbials of Duration: *until, since, in, for*

D) Extended-Now Adverbials: *ever since*

Positional adverbials of the (A)-Type specify a point or interval of TIME at which something took place or at which something was the case. The indexical may be either *deictic* or *anaphoric* expressions. Both are context dependent and must be interpreted in relation to the utterance TIME (or speech moment), e.g. we can only know what *yesterday* means, if we know where the speaker or subject is located in TIME. The anaphoric expressions are context dependent and have to be interpreted in relation to the utterance TIME (e.g. *yesterday* = deictic) or to sometime previously mentioned in the context (anaphoric adverbials, e.g., *three weeks ago*). As for the clock-calendar adverbials, note that they are not precise in many cases.

To give an example of the intricacies already involved in the formal semantic analysis of simple positional adverbials, consider the meaning of *yesterday* or *tomorrow*. It is plausible to assume that these adverbials denote the whole day and not just an interval of the respective day (cf. Rathert 2004; Rathert 2012: 238).

- (1) a. *Ivan kašljanul_{pf} včera.*
Ivan coughed yesterday.
b. *Včera šel_{ipf} dožd'.*
It was raining yesterday.
- (2) a. *Gestern hat Ivan gehustet.*
Ivan coughed yesterday.
b. *Gestern hat es geregnet.*
It rained yesterday.

We can see that, in German, the simple past does not exactly determine the TIME span or better the exact referential TIME, because the grammatical TENSE marks just the relation between the Moment of Utterance and the Event. As opposed to this, the Ru verb not only expresses the same relation of Moment of Utterance to the moment of Event (E precedes S), but it also expresses the internal referential TIME (R) by using verbal aspect. In (1a), the coughing could be a singular event or even interval of an event yesterday. In these cases, one can imagine that yesterday denotes some TIME in yesterday. Let us call these readings existential readings (e-readings). But imagine, the person in (2a) is ill and really coughs constantly the whole day through. In this case, the Ru verb must be in ipf. aspect similar to the verb *regnen* in (1b), (2b). And in that latter case, one must use the ipf. verb (meaning of duration):

- (3) a. *Ivan kašljaj ves' den'.*
Ivan coughed all day long.

Let us call these readings universal readings (u-readings). Maybe the adverb *yesterday* is ambiguous between the e- and the u-readings. But one would not want such a simple adverbial to display such an ambiguity. More elegant solutions are available. If we add a quantificational adverb of the class *once, twice, often, seldom, sometimes* in the table as described in Rathert (2012: 238) we can get away without ambiguity:

- (3) b. *Gestern hat er oft/einmal gehustet.*
Yesterday he has often/once coughed.

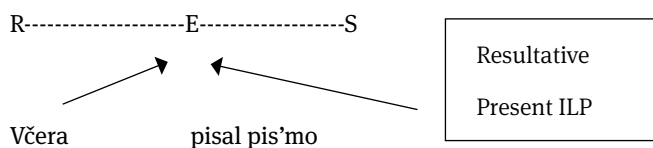
I am assuming a covert existential quantifier like \exists , and assuming that *yesterday* and \exists interact, which delivers the seeming ambiguity of *yesterday*, and we get the e-readings in (1a) and (3b) of

the adverbial yesterday has scope over \exists . On the other hand, we get u-readings if the \exists has scope over the adverbial yesterday (cf. Rathert 2012: 239).

In the following examples, we concentrate on the simple deictic situation, when the speech moment and the subject are the same. In the following example, the situation of a simultaneous past event with a resultative state can be expressed both with a perfective verb or an imperfective verb in the past tense, whereas the resultative state must be expressed with a predicative small clause with a resultative short form adjective (here as n-Participle), and it is obligatory with Nom, because »dostupno« (available) is a result corresponding in this respect with individual level predicate (ILP), as if the resultative state would be unchangeable / permanent (cf. Kosta 2019):⁵

(4)

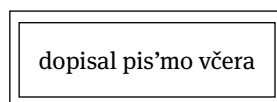
- a. PETR PISAL PIS'MO VČERA, I TEPER' PIS'MO DOSTUPNO



i teper' gotovoe pis'mo dostupno.

- b. Petr dopisal⁶ pis'mo včera, i teper' gotovoe pis'mo dostupno.

{R/E}-----S----->



5 The *resultative reading* of the Perfect correlates with the Nom assignment in present tense, but in other tenses (future/preterit), the predicate available functions as Stage Level Predicate (SLP) and should be assigned Instr instead of Nom. Thus, in future, the same sentence should allow for both Cases: *Petr napisal pis'mo včera, i pis'mo budet dostupno* / *dostupnym* ne pozdnee zavtra. Cf. in detail the distinction between stage level predicates (SLP) and individual level predicates (ILP) in Kosta (2019). The predicate *available* is considered by Kratzer (1995: 125 passim), and SLP Kosta & Zimmerling (in print).

6 In traditional descriptive approaches (Isačenko 1962; Agrell 1908, etc.), the prefix *do-* denotes the complete type of action, in verbs for the designation of the end phase of the action (*do-pisat'* – »finish writing / write to the end«).

Tab. 1: Deictic Adverbials and Aspect (Resultative Meaning).

(5)

- a. *Petr *dopsal* dopis **včera**, ale nedokončil ho.
 *Petr finished writing the letter yesterday, but did not finish.
 {R/E}-----S----- {R/E}----->
- b. Petr *psal* dopis **včera**, ale nedokončil ho.
 R-----E-----S----->

In (4a), the verb has the ipf. aspect form and is marked »telic«, so that the theoretical possibility of reaching the telos »goal« is given (the result is not excluded). But the additional comment in the second part of the clause is needed in order to know that the letter has been finished (*i teper' gotovoe pis'mo dostupno*, »and now the letter is at your disposal«).

In (4b), the additional information of the right side of the clause is redundant, because the perfective aspect has the meaning that the writing of the letter has been (successfully) accomplished. The temporal adverb *včera* (yesterday) does not entail any information about the aspectual perfectivity (cf. Rathert 2004; Rathert 2012), but it does contain information about the relation between the speech moment and the moment of reference (before today) and anterior to the speech moment, thus the adverb is deictic and not event bound. The same holds for all (5a/b), but here the information of the two verbs *napsal* (pf) (he wrote [pf]) and *nedokončil* (pf) (he did not accomplish it) represent a logical contradiction of grammatical and lexical meaning (cf. to a similar situation in which what-object and how-object clauses behave with respect to negation in Kosta & Krivochén 2014).

Translating these sentences into a language, in which no aspectual opposition is expressed on the verb as grammatical category (e.g. Standard German and British English), the translation will always be the same and no contradiction or ungrammaticality will arise, independently of the TENSE (Simple Past or Present Perfect).

In Cz (5a): »*Petr *dopsal* dopis *včera*, ale nedokončil ho«, the question arises: Is (5a) ungrammatical or just semantically marked? In our concept of mapping sentential (compositional) meaning of the sentence onto syntax, the answer is: the sentence (5a) is both, ungrammatical and semantically (logically) excluded.

As opposed to this notion reserved now for Aspect, let us call TENSE as grammatical expression of TIME the »external or deictic TIME«, because in the system of Reichenbach (Reichenbach [1947] 2005: 75–78) entails three TIME points: (a) point of speech (S), when the speaker utters the event, which can be before, during or after the event, thus S-E, S/E or E-S, point of reference (R) and point of event (E). With this algorithm (cf. Table 2), Reichenbach could well describe the six TENSES of English, but we need a combination of Aspect and TENSE in order to describe the complex correlation between Aspect and TENSE in Slavic, which only partly could have been done for English in Reichenbach. We will use some further models developed in Slavic linguistics and partly also taken from Vendler (1967).

Tab. 2: TENSES in English (Reichenbach 1947)

1. Past Perfect E----R----S-----> <i>I had seen John.</i>	5. Simple Past ----R, E-----> <i>I saw John.</i>	9. Present Perfect ----E-----S, R-----> <i>I have seen John.</i>
2. Present ----SRE-----> <i>I see John.</i>	6. Simple Future S, R -----E-----> <i>I shall see John.</i>	10. Future Perfect ----S-----E-----R-----> <i>I shall have seen John.</i>
3. Past Perfect Extended E----R----S-----> <i>I had been seeing John.</i>	7. Simple Past Extended ----R, E-----S-----> <i>I was seeing John.</i>	11. Present Perfect Extended ----E-----S, R-----> <i>I have been seeing John.</i>
4. Present Extended -----E-----> <i>I am seeing John.</i>	8. Simple Future Extended ----S, R-----E-----> <i>I shall be seeing John.</i>	12. Future Perfect Extended ----S-----E-----R---> <i>I shall have been seeing John.</i>

In our view, trying to increase the number of temporal reference points, and thus also relations, is not a solution. The task of a linguistically exact and economic description should be to look for principles that describe, derive and explain a complex phenomenon under the principle of least effort (minimalist hypothesis from Chomsky 1993; Chomsky 1995). This concept is based not only on the conviction that an adequate description and explanation should be guided by the principle of economics, but that linguistic knowledge, and this includes the »temporal« itself, is an inherent part of a complex, modular system, rooted in Principles of economy and based on simplicity; an admittedly constructed model of the (linguistic) cognition must be so that it can be learned within a short TIME span by the child during the first years of acquisition a L1 and processed cognitively without much effort (see Kosta 2020). From the point of view of the grammatical category of TENSE, the logician PRIOR 1967 pointed out the problems of the Reichenbach system in 1967. He described this system as too simple and too complicated at the same TIME: 1) too simple because there are apparently TENSES in which, in his opinion, the number of reference points should be increased. An example is given in this context by Beedham (cited here from Steube 1980: 20) for the English Future II in the continues (expanded) form:

- (6) a. *I shall have been going to see John.*
b. *Just think! Next summer I shall have been going to see John every week for ten years.*
S-----R2 ----- E----- R1, ----- >

The reference point R2 in (6b) as the second reference TIME is, according to Prior 1967, the intersection where the speaker started visiting John. Trying to describe the relationship between aspect-tense-action type (Aktionsart) in a complex TIME model, proves to be extremely complex. Such attempts have already been made by several Slavists, e.g. the term »episodicity« by Lehmann (1994: 153) and Hansen (1996: 13), who associate this term with the opposition between localized in an episodic moment in TIME vs not localized.

We share the opinion of Steube (1980) that, in the sense of the economy of linguistic modeling of TEMPORALITY, one should do without redundant (empirically not motivated) or stipulated terminology of the TIME reference. The above example (6b) shows that one could indeed do without the second reference point R2, since one can choose the <duration of the event E (TIME period)> as the reference point (as in Steube 1980; Steube 1970: 37–52, however, still) with the semantic characteristics <results>, <past>, <future>, <present>, <current>, <prematurely>, <hypothetically>. Breu (1985) works with the concept of the limit of an action (Handlungsgrenze) as basis for lexematic (semantic) classification of verbs (from Avilova 1976), and he tries to show that the limits of an action can be expanded by the term »probable limits«, so that the class-specific behavior of the aspect partners can be recorded (for further contributions see Kosta 1995: 53, 54).

A very systematic approach is Lehmann⁷ (1994) who states that, in continuation of the traditional tense description including Reichenbach (1947) and typological knowledge (especially Dahl 1985), he uses the following terms: The TENSE functions (»TIME levels«) consist of (a) the relation of the anterior, simultaneous and posterior TIME relation between (b) the localized action situation and (c) the temporal localizer (reference time) (see Lehmann 1994). This results in three paradigms of TENSE functions:

- the deictic functions: »present«, »ante-present«, »future«, »ante-future«;
- the narrative functions: »past«, »ante-past«, »narrative future«;
- the omnitemporal Tense function.

Before we sketch our definition of compositionality (of temporal meanings), we need to explain what deictic TENSE function means. We try to show this on the examples in section four.

4. The Deictic TENSE Functions in Russian

The localizer (the reference / reference TIME) of the deictic function paradigm is the speaking TIME. The TENSE functions are:

»Present« (= default function of the present), i.e. the actional situation (event TIME) overlaps with the speaking TIME (TIME of the speech moment):

7 Volkmar Lehmann (p.c.) differentiates between form and function. From the formal (paradigmatic) point of view, either paradigms (form) are meant, then there is only one form (*zakryvaj-u, zakroj-u*) and not a present and simple future. But if we are talking about grammatical tenses with a specific function (present, future), then pf must be non-past and ipf future are regarded as aspect variants of the future.

- (7) *Ja pišu pis'mo.* (truth value: The letter is not being finished)

< -----|E/S|----- >

»Pre-Present« (typical function of a perfect), i.e. anteriority to the speaking TIME;

- (8) *Ja napisal pis'mo.* (truth value: The letter is written, is finished)

<-----E | S-----|

»Future« (typical function of a future I), with the situation posterior to the speaking TIME. As a peripheral TENSE function, the function belongs to the deictic paradigm

-----|S > E |----->

- (9) *Ja budu pisat' knigu.*

Futurum exactum (Future II), with the situation late at the speaking TIME and early to another, future situation, is given in Polish (in Czech and Russian, there is no tense Future II):

- | | | |
|------|---------------|--|
| (10) | Po ślubie | Piotr <i>będzie robił</i> dla swojej żony wszystko, czego nauczył się z porażek pierwszych trzech małżeństw. |
| | After wedding | Peter AUX _{FUT} <i>do</i> for his wife all, which learned Refl from failures first _{GENPI} three _{GENPI} marriages _{GENPI} |

The »present« function is activated in the Slavia by default with the ipf. present in many functional variants (see Mehlig 1999 and Lehmann 2009).

With the ipf. present, performative acts can be marked, expressing an ongoing actual speech act parallel to the action, in which speech moment and event overlap:

- (11) a. *Otkryvaju sessiju segodnjašnej konsul'tacii.*
 b. *Tímto zahajují zasedání dnešní konzultace.*
 I hereby open the session of today's consultation.
- (12) a. *Nastojáščim ja prinimaju zakon o tom, čto prezident budet imet' men'se ispolnitel'noj vlasti v buduščem.*
 b. *Přijímám zákon, že prezident bude mít v budoucnu méně výkonné moci.*

I hereby enact the law that the President will have less executive power in the future.

-----|SE |----->

pf. Present – often in combination with modal particles and modal adverbs – wfulfills modal functions, cf.

- (13) *on (naverno) otkroet ljuboe okno* (Lehmann 2009)
he opens every window for you (with the meaning he will surely be serving you, be loyal to you)
- (14) a. *Petr nepremenno sdelaet vse vozmožnoe dlja Urszuly.*
b. *Petr pro Urszulu udělá určitě vše co je v jeho moci.*
c. *Piotr z pewnością robi wszystko, co w jego mocy dla Urszuly.*
Peter will certainly do everything in his power for Urszula.

The Tense function »future« is separated according to aspects synthetically with the pf. Present Tense (*zakrojut* »they will be closing«) and expressed analytically with the auxiliary verb for »be«. The content verb is an ipf. Infinitive (*budut zakryvat* »they will close«).

The future in Ru, Pl and Cz is expressed through the pf. present.

The former Proto-Slavic perfect with the present form of the auxiliary verb for »to be« and the full verb with active participatory suffix {-l-} has generally retained its »pre-present« function, but in Ru it has expanded to include the narrative paradigm (the corresponding laws of grammaticalization following). In Ru, the loss of the present auxiliary verb for »to be« has given rise to a synthetic form with endings for number and gender, cf. *pisa-l-a* »wrote / wrote-fem«.

The next important category which participates on the compositionality of temporal meaning is the term »Aktionsart«, which is determined best in the study of Vendler (1967) (cf. footnote 1 of this chapter).

5. »Aktionsart« Classification According to Vendler – Aspectual Classes and Aspectual Adverbials

5.1 Vendler's (1957, 1967) Classification and the Internal Temporal Structure of Verbs

In his seminal work *Verbs and Times*, Zeno Vendler (1957; 1967) tries – in the context of a linguistic-philosophical approach to verbs – to classify verb phrases in English based on their internal temporal structure. Vendler's (1957; 1967) classification is based on the metaphysics of Aristotle and his distinction between kinesis and energeia. The term »kinesis« means, following Aristotle, »actions that are aimed at a goal«, while the term »energeia« means actions that already carry their goal in themselves. In linguistics, this contrast is reproduced by the oppositions »bounded« / »unbounded«, »limited« / »unlimited«, »perfective« / »imperfective« or »telic« / »atelic« (see Thieroff 1992: 26).

In addition, Vendler (1957) takes up Gilbert Ryle's (1949) work *The Concept of Mind*, in which the first division into achievements – verbs with a result that occur at a certain moment – and activities – verbs without a result that last for a long time – is presented, resulting in the proposal that verb meanings could be classified into four basic classes: states, activities, achievements, and accomplishments, depending on their interaction with aspectual and temporal modifiers (cf. also Rothstein

2007: 2). Vendler (1957) refers to (a) the admissibility of the progressive and to (b) the combination with duration, TIME frame, and point adverbials.

The fact that Vendler’s classification has exactly four types of action is not arbitrary with Rothstein (2007: 2), but is related to the fact »[...] that Vendler properties are constraints on how we characterize events.« Following Rothstein (2007), there are four basic verb classes with exactly these temporal features, and this follows from the fact that verb meanings – or event properties – are necessarily characterized by two basic features, »whether or not they are inherently temporally extended, and whether or not they express events of change« (cf. Rothstein 2007: 2). As a starting point for classifying factual descriptions with regard to the aspect category in Ru, we choose that from Vendler (1957) (cf. Mehlig 1981; Mehlig 1988*). Vendler distinguishes four verb classes:

Tab. 3: Classification of verb classes as action types (Vendler 1957)

State	have, love, rule, know, like
Activity	run, walk, swim, push something
Achievement	lose an object, win the race, reach the summit, start
Accomplishment	write a novel, make a chair, paint a picture

Vendler gains this classification based on two criteria:

1. Can the respective verb be in the expanded (extended) form in English?
2. Is the respective verb with so-called inclusive durative, i.e. Adverbs of the type *in two hours* licensed?

According to this classification and categorization of factual descriptions⁹, the Slavic Verbs, here demonstrated with Russian, Polish, and Czech, can be divided into state, course, and event verbs.

STATES: are descriptions of the facts, which remain the same over a certain period of TIME, remain in relative calm: these predicates are marked with the semantic feature+static (+STAT), thus States not develop, the beginning or end are not perceptible to the senses (sensorimotor). The ex-

8 A clear distinction between predicate types (cf. Vendler) and the possibility of their aspectual characterization is of course necessary. Both are orthogonal to each other. Isačenko’s distinction mentioned above (external deixis vs. internal deixis) relates to the aspectual characterization. The term »holistic« is not used in the aspect literature to characterize the pf. aspect used, but for the characterization of factual descriptions: Accomplishment predicates and Achievement predicates describe in fact both holistic facts, which in turn can be represented from different aspects perspective: as inner Deixis or as External Deixis. I refer the reader to the important contributions of Klein, Plungjan, and Mehlig.

9 Mehlig differentiates factual descriptions of Vendler’s actional classes as follows: Within the so-called factual meaning of the ipf. aspect two variants must be distinguished. First, an ipf. predication may have general referential status and refer to the kind, i.e., the »type« of the described situation. This meaning will be termed *general-factual* ipf. aspect. Second, it may refer to a specific, individualized situation, a »token« without representing the situation as progressive, as on-going. This meaning of the factual ipf. aspect will be termed *singular-factual*. The article shows that the difference between general-factual and singular-factual ipf. aspect is relevant for negative answers to yes-no questions.

ternal argument is mostly assigned the Theta-role Experiencer or Possessor, if the argument is animate, and Causa, Instrument, Theme or Local, if the external argument is inanimate. The Agent Theta-role or the Patient Theta-role are thus excluded by definition. Examples are: *imet'*, *mieć*, *mít* – »have«; *znat'*, *wiedzieć*, *znać*, *znát*, *vědět* – »to know«; *verit'*, *wierzyć*, *věřit* – »believe«; *nadejat'sja*, *spodziewać się*, *doufat* – »hope«; *ljubit'*, *kochać*, *milovat* – »love«; *stoit'*, *kosztować*, *stát* – »cost«; *vesit'*, *ważyć*, *vážit* – »to weigh«.

PROCESSES (Actions): are descriptions of the processual continuity of affairs, a process proceeds in TIME, it embodies a movement, it is dynamic (+DYN), it consists of successive, mutually replacing phases within a certain quality (homogeneous phases) and uses energy for its maintenance. Examples are *čitát'*, *czytać*, *číst* – »read«; *guljat'*, *spacerować* / *pójść na spacer*, *procházet se* – »go for a walk«; *pet'*, *śpiewać*, *zpívat* – »sing«; *razgovarivat'*, *bawić się*, *rozmawiać*, *bavit se*, *rozmlouvat* – »talk«; *echat'*, *jechać*, *jet* – »drive« (in one direction); *ezdit'*, *ježdzić*, *jezdit* – »drive« (move back and forth in two directions); *stroit'*, *budować*, *stavět* – »build«.

EVENTS: causes one state or course to be replaced by another, a change in the situation, the change from quantitative changes to a new state or quality. Examples are *vyjti/vychodit'*, *wyjsć/wychodzić*, *vyjít/vycházet* – »go out«; *vstat'/vstavat'*, *wstać/wstawać*, *vstát/vstávat* – »get up«; *rasskazat'/rasskazyvat'*, *opowiedzieć/opowiadać*, *povědět*, *povídat* – »tell«; *sverknut'*, *zabłysnąć*, *zablísknout se* – »flash«; *s'ezdit'*, (s)ježdzić tam i z powrotem, *zajet někam* – »go there and back«.

ACHIEVEMENTS: Verbs, which are typically achievements (E *arrive*, Ru *pribyt'*, Pl *przybyć*, Cz *přijet někam*, *dorazit*), do not pass the expanded form in English, so that the progressive form is excluded, but they seem to allow for a TIME span duration, which in English would be expressed with the duration adverbial of type two minutes. In Ru, Pl and Cz, these verbs are perfective and potentially telic and they exclude the duration adverbials, because the point at which the telos is reached is punctual, so that **Posol pribyl čerez čas v Moskvu*. (*prodlóžitel'nost' priezda*) is excluded.

ACCOMPLISHMENTS: Verbs which are typically accomplishments do pass the expanded form test in English, so that the progressive form is licensed and they seem to allow for a TIME span duration, which in English would be expressed with the duration adverbial, e.g. two minutes. In Slavic languages (Ru, Pl and Cz) this class is divided in a subclass of atelic verbs (encoded as ipf. verbs) and of telic verbs (encoded as pf. verbs). The best characterization is that an accomplishment denotes a duration – either a telic duration or a non-telic one. The preposition E *in* denotes the goal (telic), and *for* does not (atelic). In Slavic, the atelic accomplishments allow for a duration adverbial of TIME (in Ru *v tečenie časa* »in the course of an hour«, Pl *przez godzinę* »over an hour«, Cz *hodinu* »one hour«), while the telic accomplishments (pf. aspect) allow for an aspectual adverbial which encodes the resultative state after or to which the telos has been reached (Ru *za čas*, Pl *za godzinę*, Cz *za hodinu* »in an hour, after an hour«).

5.2 Hybrid Predicates between Achievements and Accomplishments

Apart from the classical Vendlerian distinction of four classes of *actionality*, *states*, *activities*, *achievements* and *accomplishments*, there is a rather heterogeneous class of predicates, which fall into none of the four classes. As Mehlig (2012: 171) defines them, they »are hybrid in their

actionality and can be classified as Activities as well as Accomplishments«. The specific meaning causes »that they can be coded perfective not only by a paired perfective verb but also by a so-called delimitative procedural verb« (ibid.). Furthermore, Mehlig distinguishes two different types of hybrid Accomplishments: 1) where the »Activity component is conceptualized as a homogeneous continuous process and thus fulfills the principle of arbitrary divisibility«. In this case, »the ipf Aspect, which forms the basis for coding the Accomplishment as perfective by a delimitative procedural verb, has durative-procedural meaning«. 2) Hybrid Accomplishments, »where the Activity component consists of several randomly ordered subevents« and fulfills the criterion of cumulativeness. In the latter class 2), the Activity component has the conative meaning (ibid.).

5.2.1 Accomplishments with a Homogenous Activity Component

The term »hybrid predication« was proposed by Bertinetto (in Bertinetto, Squartini 1995: 12), who works on the category of aspect in English and in the Romance languages. For him, hybrid predicates such as »to paint the wall« can be modified not only by the inclusive temporal adverbial *in two hours* (which serves as a test in Vendler 1967: table 4), but also by the non-inclusive durative adverbial *for two hours*.

5.2.2 Aspect Adverbs and Lexical Aspect¹⁰

In the following section we will try to prove that especially the last two classes achievements and accomplishments deserve a more fine-grained analysis due to many problems in Slavic data. We try now to give a short discussion of this parameter.

Verbs that mark accomplishments and achievements are telic. The following sentence denotes an achievement:

- (15) a. *Posol pribyl_{PF} v Moskvu.* (Ru)
 b. *Ambasador przybył_{PF} do Moskwy.* (Pl)
 c. *Velvyslanec dorazil_{PF} do Moskvu.* (Cz)
 The ambassador arrived in Moscow.

The distinction between accomplishments and achievements is difficult to define. The best characterization is that an *accomplishment denotes a duration* – either a telic duration or a non-telic one. The preposition *in* denotes the goal (telic) and *for* does not (non-telic):

- (16) a. *Genri krasil dom v tečenie chasa.* (Ru)
 b. *Henry malował_{IPF} dom przez godzinę.* (Pl)
 c. *Henry maloval_{IPF} dům hodinu.* (Cz)
 Henry painted the house for an hour. (atelic verb)

¹⁰ For an analysis on the choice of adverbials and delimitative conjunctions cf. Tatevosov & Ivanov (2009).

- (17) a. *Genri pokrasil_{PF} dom za čas.* (Ru)
 b. *Henry namalował_{PF} dom w/przez godzinę.* (Pl)
 c. *Henry namaloval_{PF} dům za hodinu.* (Cz)
 Henry painted the house in an hour. (telic verb)

This is an example of the first hybrid class of Accomplishments, characterized in the previous section as an Accomplishment with a Homogeneous Activity component that is conceptualized as a homogeneous continuous process and thus fulfills the principle of arbitrary divisibility (cf. also Mehlig 2012: 172).

Achievements do not mark duration. Neither *in* (in Cz expressed with a direct Accusative of TIME as complement *hodinu*, in Pl with the temporal PP *przez godzinę* »over an hour«, in Ru *v tečenie časa* »in the course of one hour«) nor *for* (in all Slavic languages marked with the PP *za* + Accusative of TIME) can modify an achievement marking duration:

- (18) a. **Posol pribyl čerez čas v Moskvu.* (Ru)
 b. **Ambasador przybył w/przez godzinę do Moskwy.* (Pl)
 c. **Velvyslanec dorazil_{PF} do Moskvy za hodinu.* (Cz)
 *The ambassador arrived in an hour in Moscow (the duration of arriving).

The predicate *to arrive* can be reinterpreted as accomplishment after the process of coming to somewhere and staying in one location, but then the arriving itself is not seen as the »duration of arriving«, but rather as the resulting state after the arrival:

- (19) a. **Posol pribyl na čas v Moskvu.* (Ru)
 b. **Ambasador przyjechał do Warszawy na godzinę.* (Pl)
 c. **Velvyslanec dorazil do Prahy na hodinu.* (Cz)
 *The ambassador arrived for an hour in Moscow / Warsaw / Prague
 (the duration of arriving).

Painting is something you can do for a period of time; arriving you can't. Note that if *for NP* follows the goal, it may refer to an intended stay:

- (20) a. *Posol pribyl v Moskvu na čas.* (Ru)
 b. *Ambasador przyjechał do Warszawy na godzinę.* (Pl)
 c. *Velvyslanec dorazil do Prahy na hodinu.* (Cz)
 The ambassador arrived in Moscow/ Warsaw/ Prague for an hour.

This means the ambassador intends to be in Moscow for an hour; it does not mean he spent an hour arriving there, which of course makes no sense. Similarly, *in an hour* may refer to the TIME he will arrive in reference to the speech event:

- (21) a. *Posol pribudet_{pf} čerez čas.* (Ru)
 b. *Ambasador przyjedzie_{pf} za godzinę.* (Pl)
 c. *Velvyslanec dorazí_{pf} za hodinu.* (Cz)
 The ambassador will arrive in an hour.

Another distinction is found with the Adverbial Ru *čut + ne¹¹*, *počti* + Pos, Pl *prawie*, Cz *téměř* – »almost«, belonging to the VP-Adverbs class 7: Aspectual Adverbs II: (a) prospective and delimitative (Cz *skoro*, *téměř* | Ru *čut + ne*, *počti*, Pl *prawie*, Sbk. *gotovo*, German *beinahe*, fast Engl. *almost*):

- (22) a. *Genri čut' ne pokrasil dom.* (Ru)
 a'. *Genri počti zakončil krasit' dom.* (Ru)
 b. *Henry prawie pomalował dom.* (Pl)
 c. *Henry dům_i téměř maloval t_i.* (Cz)
 c'. *Henry téměř namaloval/domaloval dům.* (Cz)
 Henry almost painted the house.

(22) is ambiguous. The English equivalent with »almost« means that Henry almost started to paint the house, but didn't apply any paint, or it means that he had been painting the house and was nearly complete when he stopped. In R (22 a/a'), both readings are ambiguous, but (22 a) means that Henry intended to paint (ipf. Aspect), but did not even start (e.g. for lack of paint), while (22a') has only the second English interpretation, namely that Henry had been painting the house and was nearly complete when he stopped. The Cz (22c') example is clearly the second readings, while (22c) means that Henry intended to paint but did not even start (e.g. for lack of paint). In this reading, the object shift in (22c) is obligatory to get the definite intentional reading of the topicalized direct object and of the failed attempt, i.e. the »partial success interpretations« (rather than the aspectual meaning of a not accomplished temporal situation) (cf. footnote 2).

The distinction becomes clearer when the verb start is used or when a quantifier is used:

- (23) Henry *almost* started to paint the house.
 (24) Henry painted *almost* all of the house.

11 This model of a delimitative adverbial/conjunction/particle + negated pf. verb seems to be wide spread in Slavic, cf. also Barentsen (2007) with similar examples for Ru »poka« + *ne*, Po »(do)póki« (+ negated PF). However, things are more complex and complicated and different, insofar as in Ru »čut« *ne'* can and sometimes must be combined with the ipf. form of the verb. As opposed to this, the temporal particle Ru »počti« and Cz »téměř« cannot be combined but with positive polarity / affirmative predicate and Neg is excluded: Cz *Henry dům_i téměř nenamaloval t_i, Ru *Genri počti ne narisoval dom.

(25) does not get this reading. It only means that the ambassador nearly arrived there, but he didn't actually arrive yet.¹² Then we obtain the reading of the non-achievement of a point on the TIME axis, rather than that of a partial success or failed attempt:

- (25) a. *Posol počti pribyl v Pragu.* (Ru)
 b. *Ambasador prawie przybył do Pragi.* (Pl)
 c. *Velvyslanec téměř dorazil do Prahy.* (Cz)

In German, this difference must be expressed by the choice of the sentential mood *realis irrealis* (failed attempt¹³) vs *realis* temporal interpretation:

- d. Der Botschafter *wäre fast* in Prag angekommen.
 e. Der Botschafter *ist* in Prag *fast* angekommen.

5.3 Some Critical Remarks on Compositionality of TIME

The postulate of compositionality from Frege (1884) and Montague (1970a; 1970b; 1973) is used as a semantic axiom. All levels of meaningful elements that feed into temporal meanings of a sentence participate on the compositional meaning of the sentence. Compositional meaning of the sentence is its compositionality. According to the definition given in *Stanford Encyclopedia of Philosophy*, compositionality implies that

[...] anything that deserves to be called a language must contain meaningful expressions built up from other meaningful expressions. How are their complexity and meaning related? The traditional view is that the relationship is fairly tight: the meaning of a complex expression is fully determined by its structure and the meanings of its constituents – once we fix what the parts mean and how they are put together we have no more leeway regarding the meaning of the whole. This is the principle of compositionality, a fundamental presupposition of most contemporary work in semantics. (cf. *Stanford Encyclopaedia of Philosophy: Compositionality*)

12 Accomplishments can also reach a state which Tatevosov & Ivanov (2009: 83) call »failed attempt« or »partial success interpretations« and they consider verbs and clauses such which pass the time duration test »for/in two minutes« vs time span duration with »two minutes«, cf. in Vendler (1967). The difference of these two types is demonstrated in (i) *Vasja odkrył_{pf} dver za minutu*, »Vasja opened the door in a minute« vs. (ii) *Vasja po-otkr-yva-l dver' pjat' minut* with the interpretation of the conative Aktionsart »Vasja was about to open the door for five minutes but then he gave up«. The examples like (ii) are typical for failed attempt of accomplishment.

13 But interestingly not in any other modern European language. In English, French, Italian, and Spanish, the first choice to translate the German example would be just like in (25) a.–c. with the mood indicative *realis*. On the interplay between Modality and Aspect and Mode and Tense cf. the seminal work of Abraham & Leiss (ed.) (2008). See also Abraham (2010: 13–28).

The principle of compositionality is not committed to a specific conception of meaning. In fact, it is frequently announced as a principle that is applicable to whatever a semantic theory might assign to expressions of a language. Furthermore, although the reference of an arbitrary expression is definitely *not* something one would normally call its »meaning«, versions of the following principle *are* frequently called »the principle of compositionality«.

For every complex expression e in L , the reference of e in L is determined by the structure of e in L and the references of the constituents of e in L .

We use the word »reference« here roughly the way Frege (1892) used »Bedeutung«. But it could also be taken the way Lewis uses »extension«. The differences are significant, but they do not matter for present purposes. To avoid confusion, we should call this the principle of *compositionality of reference*, and (C) the principle of *compositionality of meaning*; when we speak of compositionality unqualified, what is meant is always the latter. Since the arguments in favor of compositionality tend to be based on general considerations about linguistic understanding, which, I shall suppose, amounts to nothing more or less than understanding what linguistic expressions mean, proponents of (Crefref) have a choice to make. They can advocate (Crefref) on different grounds or they can claim that an appropriate theory of the sort that assigns (relative to a variety of contextually determined factors) references to expressions can serve as a theory of meaning.

Formalizations of (C) typically make no assumptions about what meanings are. This way we achieve generality and stay clear of dogmatic pronouncements. Still, it is a mistake to abandon all constraints for that turns compositionality into a vacuous requirement. It is trivial that we can compositionally assign *something* to each expression of a language (for example, if expressions serve as their own meanings, semantics is certainly compositional!), but it does not follow that it is trivial to *adequately* assign *meanings* to them.

Definition of Compositionality:

For every complex expression e in L , the meaning of e in L is determined by the structure of e in L and the meanings of the constituents of e in L (Kosta 2020).

6. Summary

The present article tries to postulate the term TIME as a cognitive reflex of the physically measurable TIME. TIME can have different forms of expression and content in the Slavic languages. As a form of expressing the relationship between the moment of speech, the event TIME and the reference TIME, the grammatical TENSE category plays a central role. While the North Slavic languages (i.e. the East Slavic languages Russian, Ukrainian, Belarusian and the regional small languages such as the Lechitic and Czecho-Slovak group of the West Slavic languages) have a three-part tense system compared to South Slavic: present tense for simultaneity, past-tense for events before the moment of speaking, and the analytical future tense for subsequent events, the South

Slavic languages still have an active 6-stage system: aorist, imperfect, perfect and past perfect for prematurity, present tense for simultaneity, and simple analytical future tense I and future exactum / perfect for future events. The structure of the grammatical tense in Russian, Czech, and Polish is refined by the combinability and restrictions with the perfective and imperfective aspect that every Slavic verb has (with the exception of perfectiva tantum and imperfectiva tantum). In this essay, the attempt is made for the first time to describe the event semantics, the syntactic structure, and the adverbial semantics that determine the reference time in a radical minimalist framework in terms of their incremental combinability and to put together the new frames of meaning resulting from the compositionality principle.

In order to make it easier to read, emphasis is placed on as few formalisms as possible. We hope to have been able to demonstrate that, firstly, the relationship of the incrementality of individual meanings of the categories TIME narrows down the actual »sense« of a proposition, and that, secondly, the verbal and lexical categories including TENSE> aspect> type of action> and adverbial semantics cause an incremental restriction of the possible interpretations of a sentence and its meaning. Using the example of the relationship between physical TIME, grammatical TENSE, verbal aspect, action semantics of verbs (i.e. types of action in the Vendlerian sense), and adverbial classes regarding temporal and aspectual meanings, an increasing incremental narrowing of the meaning of the proposition including disambiguation comes up. In some special cases of hybrid predicates and adverbial semantics, the modification of the compositionality from Frege (1884) postulated by us in the previous sections here could be specified more precisely by the closing formula in relation to the case of TIME treated here.

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