

On the History of Compositional Aspect: Vicissitudes, Issues, Prospects

By Krasimir Kabakčiev*

Compositional aspect (CA) is a fundamental language phenomenon discovered in 1972 by the Dutch linguist Henk Verkuyl. It is the mechanism of explication at the level of the sentence of the values of perfectivity and imperfectivity, otherwise found in verbs as lexical entries in Slavic and some similar languages. Its discovery ultimately made a huge breakthrough in linguistics, but the recognition of its significance came after years and decades of misunderstanding and twists and turns in conceptualization. Even today, nearly half a century after the discovery of CA, the theory behind it remains rather misconceived, despite the sea of publications dealing with it. This paper offers an overview – through the eyes of the author, hence inevitably polemical – of some of the history of CA, with its vicissitudes, issues and, most significantly, prospects.

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Compositional Aspect – Some of its History

CA is a fundamental language phenomenon, discovered by the Dutch linguist Henk Verkuyl in 1972 on Dutch and English data. Entitled *On the Compositional Nature of the Aspects*, Verkuyl's (1972) work made a gigantic breakthrough in the understanding of aspect that dominated linguistic theory at that time – although, as we shall see, the impact of the discovery of CA on linguistic thinking was far from sudden. It materialized slowly through the years and decades, and the process of the recognition of CA by the aspectological community has not ended to the present day. The theory of CA is now almost half a century old and this review of its development contains facts from the more distant history too – for a better understanding of what happened in the past and what is happening today.

Previous conceptions in linguistics, roughly until the 1970s, maintained that aspect – not only called verbal aspect (henceforward VA) until then but also regarded solely as such, is represented exclusively by verbs as lexical entries and restricted to the Slavic languages, plus some other (Latin, Greek) as a heritage of Proto-Indo-European. Reigning unchallenged in aspectology until the 1980s was Jakobson's (1957) idea that aspect is a category *per se* that has nothing to do with the participants in an event or a state – in contrast to, for example, voice. Actually, as will be demonstrated soon, aspect is *precisely the opposite*: a phenomenon inseparably linked to the participants in situations¹.

* Independent Researcher, Sofia, Bulgaria.

¹"Participants in situations", also called "nominal sentence components (or nominals) taking part in the explication of aspect", is my term, launched in Kabakčiev (1984b: 670); the one more frequently employed is "arguments". I take participants in situations to be a term better suited to CA analyses.

In Verkuyl's (1972) theory, aspect, represented by the distinction between perfectivity and imperfectivity², is not a feature of the verb or the VP but of the whole sentence, and its effectuation takes place within two semantico-syntactic schemata, a perfective and an imperfective one. Entities with different semantic and grammatical properties take part in the schemata. Perfectivity is a situation (in terms of Vendler's 1957 model of situations)³, which is temporally bounded and has an initial and an end point. These two points, together or separately, can be subsumed in a simple sentence/clause or outwardly given. A perfective situation, apart from being temporally bounded, is also normally "brought to a natural end", whereby the "natural end" is interpreted in pragmatic terms, as an inherent result of the situation on the arrival at the end point⁴. It broadly corresponds to the Slavic notion of perfectivity. Conversely, imperfectivity is a temporally non-bounded situation – whether or not an initial and/or an endpoint are present or subsumed in it, whether it describes a generally valid state of affairs (*Birds fly*) or a current activity (as in the English progressive), or an indefinitely repeated event (*I wake up early*). It broadly corresponds to the Slavic notion of imperfectivity.

Unfortunately, as often happens with revolutionary findings, Verkuyl's work first met with reactions that were not exactly negative but were not enthusiastic either. Critics accepted his major assertions but regarded the newly-discovered phenomenon as peripheral, with a restricted scope. Most importantly, they saw no link between CA and aspect in the Slavic languages (Dahl 1975, Comrie 1976). Until the end of the 1960s and even later the established view in linguistics was that not only is there no Slavic-like aspect in English but that seeking possible manifestations of it is a waste of time (Zandvoort 1962, Dušková 1983). However, against the background of the circumstance that until the 1970s aspect in languages like English was a virtual *terra incognita*, Verkuyl's work gradually started to gain recognition. Today his contribution to linguistic theory with the discovery of CA is widely acknowledged, as evidenced in hundreds of publications worldwide dealing with CA in one way or another. But the mass enthusiasm about CA rarely translates into a truly adequate understanding of it.

²Verkuyl (1972) used the (now exotic) terms non-durativity (for perfectivity) and durativity (for imperfectivity).

³Vendler's classification of situations, consisting of four members, states, activities, accomplishments and achievements, is so widely known today that familiarity with it presupposed.

⁴This is valid for prototypically perfective situations. There are non-prototypical perfective situations as well, temporally bounded but lacking the pragmatically interpretable feature "brought to a natural end". I term these "episodes" (Kabakčiev 2000: 279-307) – represented by Slavic delimitative verbs, Bulgarian imperfective Aorists, English *for*-time adverbials, etc. They will not be explored here.

Verkuyl's Theory

Underlying Verkuyl's theory is Vendler's (1957) classification with its four members – states, activities, accomplishments and achievements, but CA is a radical development of it. Vendler's (1957) classification mainly rests on the semantics of verbs and verb-noun collocations. Verkuyl's CA is explicated at the level of the sentence.

Why explicated and not expressed? Because explication, or signaling, is the indirect, covert signification of something, in contrast to its direct expression (denotation/marking/encoding)⁵. To give an example, in modern linguistics today (based on English) there is not a shade of a doubt that: (i) a sentence such as (1a) below is perfective, in contrast to (1b), which is imperfective; (ii) sentence (1a) is equivalent to a sentence with a perfective verb in Slavic, cf. Russian (1c); (iii) sentence (1b) corresponds to a sentence with an imperfective verb in Slavic, cf. Russian (1d):

- (1) a. The boy ate a fig.
 b. The boy ate figs.
 c. Mal'čik s'el_{PFV} smokvu.
 "The boy ate a/the fig"
 d. Mal'čik el_{IMPFV} smokvy.
 "The boy ate figs"

However, while the Russian verb *s'el* "ate" is marked for perfectivity, the corresponding English verb *ate* is **not** – as can easily be seen from the comparison between (1a) and (1b), two aspectually differing sentences containing the same verb form. Therefore, while the Russian *s'el* "ate" expresses perfectivity, the English *ate* in (1a) only explicates/signals it. The same with the Russian *el* "ate" in (1d) – it expresses imperfectivity, while the English *ate* in (1b) explicates/signals it. On a side note, the fact that today nobody in the linguistic community doubts the perfectivity of an English sentence such as (1a) represents proof that there is progress in scientific thinking. Prior to 1972, an assertion in linguistic circles that (1a) is perfective and (1b) is imperfective would either be laughed at or treated as heresy. But progress in linguistic thinking does not necessarily equate an adequate understanding of CA. Convinced that an English sentence such as (1a) is perfective, many aspectologists are still unable to grasp the true reasons why it is perfective, see below.

Let us return to Verkuyl's (1972) theory. His sentences (2) explicate perfectivity, due to the presence of determiners, including articles, proper names or similar bounding elements in the nominals, plus a telic meaning of the verb as a lexical entry:

⁵I proposed the notion "explication" in Kabakčiev (2000). In my English grammar (Kabakčiev 2017), I mainly use the term signaling for the same phenomenon.

- (2) a. Katinka knitted a Norwegian sweater.
 b. Greetje walked from the Mint to the Dam.
 c. Den Uyl gave the Labor Party badge to a congress-goer.
 d. Fritz played Schumann's cello concerto.

Conversely, Verkuyl's sentences (3) explicate imperfectivity, due to the so-called imperfective leaks (Verkuyl 1993: 232-233). At least one leak must be present for a sentence in (2) to turn into an imperfective one:

- (3) a. Katinka knitted Norwegian sweaters.
 b. Policemen walked from the Mint to the Dam.
 c. Den Uyl gave the Labor Party badge to congress-goers.
 d. Fritz hated Schumann's cello concerto.

The leaks, henceforward called Verkuylian in honor of their finder, are: a bare plural in the direct object (3a), the subject (3b), the indirect object (3c); an atelic lexical meaning of the verb (3d). Thus, as can be seen from the comparison between (2) and (3), the perfective or imperfective value of an English sentence may depend, *inter alia*, on the lexical properties of the verb, cf. (2d) and (3d) – *played* is a telic verb, *hated* is an atelic verb, or the presence or absence of an article or a similar determiner – cf. the other pairs in (2) and (3).

But, despite the fact that languages like English lack aspect in verbs as lexical entries⁶ and feature a regular pattern of a definite and an indefinite article, while, conversely, the Slavic languages feature verb aspect and most of them have no articles, neither Verkuyl, nor the already innumerable followers of the CA theory pay the necessary attention to the article – if they notice it at all. Instead of studying its all-round impact in – and on – the structure of language, they subsume it under the notions of *determiner* or *quantifier* and sidestep it (Filip 2000, 2017, Młynarczyk 2004, Borer 2005, Borik 2006, MacDonald 2012 – to name but a few). Some authors, apart from rejecting without any argumentation the aspectual function of the article, even separate the definite article from the indefinite one. Instead of viewing *a* and *the* as a unified entity, "the article", serving the explication of perfectivity (in contrast to "the zero article" – serving the explication of imperfectivity), they insist that the definite article has nothing to do with aspect (Młynarczyk 2004, Fleischhauer and Czardybon 2016, see Kabakčiev's 2018 response), ignoring huge argumentation provided years earlier (Kabakčiev 2000). Some (Berezowski 2011) explore the zero article and make no mention of its unbounding function; others (Husband 2012) ignore the article (*the* and *a*) despite handling Verkuyl's theory –

⁶Aspect is a grammatical category found in Slavic verbs as lexical entries. A verb is either perfective or imperfective, save for biaspectual verbs, a relatively small group. English also features grammatical aspect – with the progressive, an imperfective aspect restricted to ongoing situations. But the progressive is not located in verbs as lexical entries. It is marked on them through the *be + -ing* construction in their syntactic realization. The same with the *used to + inf* and *would + inf* constructions that encode imperfective aspect – in its habituality variant.

because aspect for them is the individual/ stage distinction (see below), not the perfective/imperfective one.

CA is impossible to understand adequately without recognizing that perfectivity, as in (2), and imperfectivity, as in (3), are only *primary interpretations*, i.e., prototypical, default, basic readings of sentences, not semantic values fixed on them once and for all (Kabakčiev 2000: 59, 137). I find it a weak point in Verkuyl's theory that this circumstance is not accounted for. The default (basic/primary/prototypical) nature of aspectual values of sentences can easily be demonstrated through time adverbials (Kabakčiev 1996). For instance, adding an adverb of non-bounded iterativity (*often, regularly, from time to time*) changes a sentence such as (2a) from a perfective into an imperfective one, cf. (4a) below; adding adverbials of a sudden change of state turns prototypically imperfective sentences like (3d) into perfective ones (4b):

- (4) a. Katinka *often* knitted a Norwegian sweater.
 b. Fritz *suddenly* hated Schumann's cello concerto.

A counterargument to the effect that (4) are new sentences, i.e., not those in (2a) and (2d), is not valid, as it is clear that aspect-changing adverbials can linger in the surrounding context and still exercise their effect. The addition of aspectual elements (too many and too complex to be described here) and the general impact of context often interfere with Verkuyl's perfective and imperfective schemata and alter the initial aspectual readings of sentences (Kabakčiev 2000). Furthermore, there are pragmatic constraints and triggers influencing Verkuyl's schemata and changing default aspectual values. I subsume these under the label "knowledge of the world" (Kabakčiev 2000: 309-326). The various factors altering the explication of perfectivity and imperfectivity make CA theory hard or even very hard to understand. But this cannot, of course, detract from its significance.

One of the most important theses in Verkuyl's model, emphasized by Dowty (1979: 64), is that "the sub-categorization with respect to aspect must take place at an even higher node than the VP". This means, for example, that (5a) below is a perfective sentence, but it would be a mistake to think that its perfectivity is solely or mainly due to the perfectivity of the VP *visited a castle* vis-à-vis the imperfectivity of *visited castles*, as in (5b). The perfectivity of (5a) is due *simultaneously* to the boundedness of *the tourist* and *a castle* and the presence of a telic verb, *visited*, the three elements *together* allowing (5a) into the perfective schema. Should a Verkuylian leak appear in any of the three components of (5a), or in more than one, the resulting sentence is imperfective. See below: (5a) is perfective (precisely why – to be explained); (5b) is imperfective because of an object leak (*castles* – unbounded by the bare plural); (5c) is imperfective because of a subject leak (*tourists* – non-bounded); (5d) is imperfective because of a leak in the verb (*knew* – atelic, in contrast to *visited* – telic). Finally, (5e) is imperfective because of two Verkuylian leaks: one in the subject, another in the object (Verkuyl 1972, 1993):

- (5) a. The tourist visited a castle.
 b. The tourist visited castles_{LEAK}.
 c. Tourists_{LEAK} visited a castle.
 d. The tourist knew_{LEAK} a castle.
 e. Tourists_{LEAK} visited castles_{LEAK}.

Within a decade after the appearance of Verkuyl's (1972) work, many separate features of his theory were considered and duly recognized (Friedrich 1974, Schopf 1974: 56-58, Zydaniß 1976: 54, Heinämäki 1974/1978: 10, Dowty 1979: 3-64, Markkanen 1979: 54-57, Carlson 1981, Mourelatos 1981)⁷. However, an extremely important element escaped the attention of researchers or was inadequately analyzed: the link between CA, as found in English, and VA, as in the Slavic languages. It was revealed in 1984, in two articles of mine (Kabakčiev 1984a, 1984b), which demonstrated the cross-language significance of CA. Elements of language structure, viz., the presence of verb aspect, as in the Slavic languages, and the regular pattern of an article (definite and indefinite), as in the Germanic languages, underlie the considerable difference between the two groups of languages. In a publication dealing with aspect in English, Bulatović (2013: 65) points out to works by Vendler, Verkuyl and Kabakčiev as "the cornerstones of what is known today as compositional aspect" – a laudatory assertion but requiring an explanation of what exactly I did. After the two 1984 papers I first made a detailed assessment of Verkuyl's theory (Kabakčiev 2000) in both his initial work and its later version (Verkuyl 1972, 1993)⁸. Second, I developed my initial understanding of aspect in the two papers – which provided a universal picture of aspect, based simultaneously on cognition and language structure (Kabakčiev 2000). Third, I described CA in languages like English as *a mirror image* of VA in the Slavic languages, and, consequently, VA in the Slavic languages as a mirror image of CA in the Germanic languages (Kabakčiev 2000: 153-161). Fourth, the representation of CA as a mirror image of VA – and vice versa – is, however, impossible without prior acceptance of some major assumptions, most essential of which is the all-pervading temporality of participants in situations (discussed below). Regrettably, the temporality of participants remains largely ignored or misunderstood today, and the necessity to disperse doubts surrounding the idea of the temporality of participants in situations lies in the focus of this paper.

More on Primary and Secondary Readings of Sentences

As already pointed out, one of the differences between Verkuyl's CA model and mine is that he assigns strict aspectual values to sentences. According to him, (2) are invariably perfective sentences, (3) invariably imperfective. This is an

⁷The term *compositional aspect* was launched not by Verkuyl (1972) but later, by other authors. The first one to use it was probably Friedrich (1974: 37).

⁸The analysis of Verkuyl's work occupies a large part of my 400-pages monograph (Kabakčiev 2000).

inference based on Verkuyl's (1993: 182) insistence that there is no way for sentences such as *Judith ate sandwiches* to be perfective. But it is simply not true that sentences like *Judith ate sandwiches* cannot be perfective – a point analyzed in Kabakčiev (2000: 239). There can hardly be a perfective English sentence for which an imperfective context cannot be found; there can hardly be an imperfective English sentence structured along the lines of CA for which some perfective context cannot be found – or specially built. Preoccupied with finding and selecting data and preparing the complex argumentation for the validity of the two schemata, Verkuyl, understandably, did not envision sub-rules: sub-rules that would allow perfective sentences to be sometimes imperfective, as an exception, and imperfective sentences to be sometimes perfective, again as an exception. Another reason seems to be "aesthetic". Verkuyl, a true scientist, is clearly prone to perceiving CA rules as approximating the exactness of rules in natural sciences, e.g., physics. His two schemata are such a solid basis of CA that soiling their beautiful structure with "pragmatic stuff" such as secondary readings probably appears a sacrilege to him (cf. Verkuyl 2001). Language, however, is first and foremost a pragmatic tool. Hence its structure, too, addresses ordinary human needs and cannot necessarily be expected to approximate laws like those of physics. Guided by this understanding, I posited rules to the effect that sentences like (2) are perfective on their default (primary/prototypical/basic) reading, and that, analogously, sentences like (3) are imperfective as a default (Kabakčiev 2000, 2017).

On the Temporality of Participants in Situations

But the largest difference between the two models, Verkuyl's and mine, lies in the treatment of participants in situations (Verkuyl's "arguments")⁹. It must be noted that in his initial work Verkuyl (1972) assigned temporality to arguments. When the relevant NPs contain determiners and quantifiers such as articles (*a/the*), demonstratives, possessives, proper nouns, numerals, etc., the participants are quantified. Without these elements they are non-quantified¹⁰. The relevant NPs contain the semantic information "specified quantity of X" – when quantified, and "unspecified quantity of X" – when non-quantified. To quote precisely (Verkuyl 1972: 96-97), the notions "specified quantity of X" and "non-specified quantity of X" "pertain directly or indirectly to the time axis". Furthermore, "the quantities of X involved are expressible in terms of linearly ordered sets of temporal entities" (Verkuyl 1972: 96-97). These statements on "quantified" and "non-quantified" arguments are not unambiguous. But the following one leaves no doubt as to the temporal nature of participants: "the category SPECIFIED could be characterized

⁹A side note concerning arguments. I reject the idea that arguments can be internal and external in aspectological terms, as in Verkuyl's (1993: 21) "asymmetry of arguments" (Kabakčiev 2000: 235-238). I treat all participants in situations as equal in status. Asymmetry has nothing to do with CA, it is a notion in transformational-generative theory handling the tree-representation of the distribution of subject- and object-NPs (Kabakčiev 2000: 238).

¹⁰"Quantified" is Verkuyl's terminology. Other studies employ the term "quantized" – with the same meaning.

as 'giving the bounds of the temporal interval in question'; the category UNSPECIFIED as 'not giving the bounds of the temporal interval in question'. Since the expression 'giving the bounds of an interval' involves referential information, SPECIFIED is provisionally located in the Determiner" (Verkuyl 1972: 59). Note that this assertion also amounts to an acknowledgment that the article, being a determiner, is a marker of temporal boundedness on nominals – another major issue in CA theory.

Thus in my two 1984 papers outlining the significance of CA and its relationship with VA (Kabakčiev 1984a, 1984b) I subscribed to the idea in Verkuyl's (1972) first work, ground-breaking and inspiring, of participants in situations (arguments) as temporal entities. It was precisely on this basis that I built the theory of the inverse interdependence of markers of boundedness – which encompasses the mechanism of mapping temporal values between nominal and verbal components. Verkuyl's (1993) withdrawal from the idea of the temporality of participants, completely unmotivated, did not, of course, change my position. It only led to my harsh criticism of this unexpected change, between 1972 and 1993, in Verkuyl's thinking (Kabakčiev 2000: 66-67, 94ff).

In contrast to Verkuyl's approach – temporal in 1972, atemporal in 1993, I have always maintained one in which all participants in situations, e.g., those in sentences (2) through (5) above, are *purely temporal entities*, with values (boundedness/non-boundedness, with sub-features) that ultimately coincide with the temporal value of the verb in the sentence/clause. Thus *the tourist* and *the castle* in *The tourist visited the castle* are temporal entities, bounded. Their temporal boundedness is, first, marked by the article, then mapped onto the referent of the verb (Kabakčiev 2000: 123-151)¹¹. Conversely, *castles* in *The tourist visited castles* is a non-bounded entity whose temporal non-boundedness in the form of indefinite iterativity is marked through the zero article and the marker of plurality. The non-boundedness of *castles*, including the sub-feature "indefinite iterativity", is mapped onto the verb, making its referent non-bounded. And, in order to take part in the situation *visited castles*, *the tourist* itself must be a temporal entity. In even simpler terms, for an observer to be able to utter *The tourist visited castles*, depicting an indefinitely recurring situation, s/he must have observed (been told about, imagined) a "moving picture" of a tourist visiting castles. It cannot be the case that *the tourist* is a "physical entity" beyond time, as it were, divorced from the rest of the sentence/proposition, i.e., from *visited castles*. Analogously, viewed from the angle of *the tourist*, the participant *castles* in *The tourist visited castles* cannot be a static picture consisting of castles standing simultaneously on neighboring hills. In the imperfective reading of this sentence *castles* is also a "moving picture" – of a non-bounded time series of castles, appearing one after the other, each castle

¹¹The mapping of temporal features onto the referent of the verb is possible because the English preterite (the past indefinite tense) has no aspectual meanings of its own. It can be likened to an empty bag (Kabakčiev 2017: 227) that can accommodate any aspectual value arising in the sentence or context. As for "verb referent" as a term, it is analogous to "nominal referent". It is the abstract entity a verb refers to. Note that nominals **can** refer to entities that are situations (actions, states, etc.). Conversely, verbs **always** (only) refer to entities that are situations.

successively visited by *the tourist*. It would be illogical to claim that while *castles* is a non-bounded recurring temporal picture, *the tourist* is a physical entity, with unknown parameters. Why unknown? Because if *the tourist* is regarded as a temporal entity, its content is clear: a fleeting thing engaging in castle-visits. But if *the tourist* is a physical entity, some questions arise: what does *the tourist* consist of? The "material substrate" of *the tourist*? If yes, when, in what time interval? Does the "material substrate" cover the lifetime of the tourist, up to the moment of utterance? And if *the tourist* in *The tourist visited castles* is something physical, how does it look like? Obviously such questions about the "material essence" of *the tourist* are impossible to answer on the basis of the single sentence *The tourist visited castles*. Furthermore, even if the observer/speaker has more information about the "material status" of *the tourist*, the hearer, receiving *The tourist visited castles*, does not obtain it – the sentence provides to the hearer no information about *the tourist* as a physical thing. Whereas concerning the temporal status of *the tourist* the hearer's knowledge is adequate and fully sufficient for the purposes of communication. The entity *the tourist* is temporal, with features inseparably linked to the features of the referent of the verb *visited* and of the participant *castles*.

Put otherwise, *The tourist visited castles* is a sentence portraying a tiny stage of the individual "the tourist"¹², namely, one engaged in visiting castles. And if someone asks how the individual behind the expression *the tourist* must be depicted, i.e., not within the confines of *The tourist visited castles*, the answer is easy. A longer passage or a short story about the tourist, describing this entity in more detail, will be a description of the individual "the tourist", including aspects of its physical appearance¹³.

But even now there remains a crucial question. Precisely how does it happen in cognitive and structural language terms that *the tourist* in *The tourist visited castles* acquires a temporal status? Note that the explication of temporal features by nominals such as *the tourist* and *castles* above mirrors the denotation of temporal features by abstract nouns such as *a grin, a deal, a fall, a party*, on the one hand, and *love, beauty, ineptitude, pride*, on the other. Detailed explanations of these two groups can be found in Kabakčiev (2000). Note the general rule in English for bounded nouns (*a grin, a deal, a fall, a party*) to be accompanied by an indefinite article, and for non-bounded nouns (*love, beauty, ineptitude, pride*) not to be accompanied by an indefinite article. Why is a castle-visit, represented by *a castle* in (5a), bounded at its ends, whereas *love* is non-bounded? Because, as we know from everyday experience, a visit to a castle is something that begins at a particular moment in time (entering the castle gates) and ends at another particular moment (leaving the castle gates), whereas *love* is something that has no definite initial point and no definite endpoint. In even simpler terms: we do not know and cannot say exactly when we started loving something or somebody; nor do we know when we stopped loving something or somebody. And it is here that an adequate explanation of

¹²The individual/stage distinction goes back in linguistics to Carlson (1977) and Quine (1960).

¹³On the necessity of a television/video representation for a description of the situation, including the temporal status of participants in such sentences, and actually in all kinds of sentences, see Kabakčiev (2000), Kabakčiev (forthcoming).

the perfectivity of *visit a castle* and *have a party*, on the one hand, and of the imperfectivity of *visit castles* and *have pride*, on the other hand, can be given. First, in a linguistic analysis all nominals can and must be treated as temporal entities at the sentence level – whether they otherwise, as lexical entries, denote physical objects (*tourist, castle*) or situations (*party, love*). Second, observe how clearly the indefinite article signifies temporal boundedness (*a grin, a deal, a fall, a party*), while the zero article marks temporal non-boundedness (*love, beauty, ineptitude, pride*); see Kabakčiev (2000) for lots of further detail. And against the background of such crystal-clear facts, there are linguists today who question the function of the article to mark temporal boundedness (see below)! But the temporality of participants in situations such as people and similar "material objects", that could be expected to turn into a theoretical issue, is not an issue in an appropriate temporal model of CA. What is more, it allows a sweeping generalization:

All participants in situations are temporal entities – not only in all sentences in English but in all sentences in all languages!

If the referents of nominals and verbs in English sentences like those above are temporal entities, they will, consequently, be temporal entities *in any language*. However, the structural specifics of each particular language must be taken into account when describing the mapping of temporal features between sentence elements: whether the language features CA or VA, whether it has articles or verbal aspect, etc. (see participants as temporal entities in the Slavic languages in Kabakčiev 2000: 155ff, 300). Regrettably, this extremely important aspect of the CA theory, temporality of participants, remains today systematically sidestepped by aspectologists, with some exceptions (Bulatović 2013, 2016). But the mass turning of blind eyes to an important aspect of a theory is actually a reassuring development – for it can be argued that if a major element in a theory has not been seriously contested for two decades after being reported by a major scientific publisher, it must be considered valid (until, if ever, proven otherwise).

On the Mechanism of Mapping Temporal Values in the Sentence – From Nominal Components onto the Verb, or Vice Versa

The previous section provided arguments related to the necessity to view participants in situations as temporal entities, something based in cognition. Let us continue the discussion of the temporality of participants, now considering the mechanism of mapping as also related to language structure. It was established that *castles* in (5b) is a temporal entity that is non-bounded and indefinitely iterative, and that these features arise thanks to the zero article and the plurality marker. Note that it is precisely the non-bounded and indefinitely recurring entity *castles* that initially explicates the imperfectivity in the sentence. But precisely how is imperfectivity maintained until the final imperfective reading obtains? Clearly, a sentence beginning with *The tourist visited* is neither

perfective nor imperfective, but can easily end up perfective by having a bounded object as in *The tourist visited a/the castle/some/ two/many castles*. *The tourist visited castles*, however, ends with the temporally non-bounded entity *castles*. What happens then is that *castles* maps its non-boundedness in the form of indefinite iterativity back onto the referent of the verb *visited*, making the latter non-bounded and indefinitely iterative (cf. diagrammatic representations of mapping in Kabakčiev 2000). Note that while the perfectivity of *The/a tourist visited the/a castle* develops gradually and is maintained relatively smoothly from the beginning to the end of the sentence, the imperfective *The tourist visited castles* starts with the aspectually ambiguous phrase *The tourist visited* and with *the tourist* seemingly bounded, through an article. After the addition of *castles* the ambiguous phrase *The tourist visited* is re-interpreted as imperfective. To a person non-versed in CA this may seem strange, though not yet bizarre. What happens next already borders on the bizarre, and is at the same time very interesting, as it underlies the fundamental structure of CA. The analysis of the imperfective sentence *The tourist visited castles* cannot stop with the assertion that *castles* imparts a non-bounded (indefinite iterativity) reading on *visited* and on the VP *visited castles*. If a major CA assumption, to which I subscribe, Verkuyl's, is that all nominals (arguments) take part in the explication of the final aspectual value of a sentence, it is absolutely necessary to define also the role of the participant *the tourist* and see exactly how its final temporal constitution arises.

The analysis started with the assumption that to be able to utter *The tourist visited castles* the speaker must have perceived recurring castle-visits by a tourist. And if the sentence is about recurring castle-visits by *the tourist*, *the tourist* is a temporal entity, consisting of a time series of stages of the individual "the tourist", coinciding with the castle-visits. In other words, *the tourist* in *The tourist visited castles* is an entity with a temporal status **exactly equivalent** to the temporal status of *castles*. But this non-bounded temporal status of *the tourist* does not materialize out of thin air, especially taking into account that it contains an article, hence it ought to explicate boundedness. The final temporal status of the entity *the tourist*, viz., non-bounded iterativity, is **forced (mapped) on it, despite the article!** Initially by the participant *castles*, and then by the VP *visited castles*. Cognitive science may for the time being know very little about what happens in speakers'/hearers' heads when sentences like these are processed in the brain, but there can hardly be any doubt that the complex and incessant mapping described above does take place in people's heads!

With the explanation above, now it can easily be assumed that *the tourist* is an unidentifiable number of tourist stages in the vision and mind of the speaker uttering *The tourist visited castles*. The assumption makes sense in everyday terms too. For the speaker of *The tourist visited castles* to be able to utter this sentence truthfully, s/he has to have observed not only an unidentifiable number of castle-visits but also such castle-visits that precisely *the tourist* executed. The explanation is also valid with respect to the structural language terms in which *the tourist* becomes a non-bounded, indefinitely

recurring entity in *The tourist visited castles*¹⁴. This happens thanks to the plurality and non-boundedness of *castles* – mapped back onto the referent of the verb *visited* and the whole VP *visited castles*, and then, further back, onto the referent of *the tourist* (see Kabakčiev 2000: 123-151).

As a synopsis, underlying the above model of CA is the idea that, understood semantically as a distinction between perfectivity and imperfectivity, in functional terms,

compositional aspect actually represents an all-pervading and perpetual process of mapping temporal features between elements of the sentence, especially between referents of verbs and of nominals that are participants in situations (i.e., verbs' arguments)

and also, partly, in the context (but this issue is not explored here). The possibilities for mapping temporal features between verbs and nominals are described exhaustively in Kabakčiev (2000), also using diagrammatic representations, cf. also Kabakčiev (forthcoming). Finally, as already argued, there is no reason not to assume that the mapping of temporal features between verbs and nominals in the sentence/clause (plus some other elements, mainly adverbial) is **a universal phenomenon**, valid for all languages. As for exactly how mapping of aspectual values from verbs onto nominals in VA systems works, e.g., in the Slavic languages, and exactly what consequences it brings about, this is an issue in need of future research.

The Failure to Recognize the Two Different Types of Aspect: CA and VA

The assumption that Verkuyl's CA theory, characteristic of languages such as Dutch and English, could be applied to languages with VA may not be especially popular in aspectology, but it is not an exotic one either. Attempts at directly applying CA to Slavic data have been made by Borer (2005) and Borik (2006), among others. This is done on the basis of their obvious, but tacit, assumption that CA ought to work in the Slavic languages too. Borer (2005: 124, 187) writes that there are languages (Slavic) that mark perfectivity directly on the verb, i.e., boundedness there is "assigned range directly" (Borer 2005: 344) – and this gives rise to "the violability of Verkuyl's generalization" (Borer 2005: 345). Put otherwise, Verkuyl's theory may generally hold for languages like English, but not for the Slavic group.

Structurally the Germanic and the Slavic languages differ essentially in that while most Germanic languages feature a regular pattern of a definite and an indefinite article and lack VA, all Slavic languages feature VA and lack articles (some Slavic languages have a definite article but no indefinite). Borer (2005: 156) fails to recognize this essential difference between the Germanic and the Slavic languages in terms of what articles and their absence can do,

¹⁴Of course, indefinitely recurring does not mean "recurring forever" but recurring an unknown number of times.

something explained years earlier on the basis of the thesis that aspect takes two separate forms, CA and VA (Kabakčiev 2000). The failure to recognize the two distinct types of aspect and the mixing up of the two phenomena leads to an impasse, with no space left for valid generalizations on aspect.

Similarly Borik (2006), treating perfectivity in English as configured in the VP instead of at the sentence level, provides examples from Russian showing that "a direct internal argument of some perfective verbs can receive a generic interpretation", i.e., Verkuyl's "unspecified quantity of X" (Borik 2006: 91). The CA theory cannot make valid predictions about Russian if it ignores the fact that Russian manifests VA, not CA. Like Borer, Borik argues that Verkuyl needs a value in the direct argument to obtain perfectivity. Hence, when perfectivity is available in the verb, as in Russian, it ought to induce "specified quantity of X" in the argument. But it does not, says Borik, as in sentences like *Petja razdelil ljudej na dobryx i zlyx* "Petja divided people into kind and mean" the verb *razdelil* "divided" is perfective but the argument *ljudej* "people" is generic, i.e., non-quantified (Borik 2006: 92). And as the association of a perfective verb with a non-quantified argument is not envisioned in Verkuyl's perfective schema, the schema, according to Borik, is defective.

It is worth asking: could Verkuyl not have made his perfective schema compatible with the Slavic data? The answer is: not really. His concern up to 1972 was the explanation of how aspect is realized in languages like Dutch and English – given that it was clear then how aspect is realized in the Slavic languages: as VA. This means that from the very discovery of CA in 1972 it became fully evident that CA represents *another type of aspect*, different from VA – something sidestepped by Borer and Borik. As for how CA and VA relate to each other, this is explained in Kabakčiev (2000: 123-161), years prior to Borer and Borik's publications.

Thus Borer and Borik illegitimately apply Verkuyl's CA theory to Russian, a language that features VA (not CA) and is radically different from English and Dutch – the languages for which CA was architected. Indeed, Verkuyl himself had also thought that his theory is applicable to all languages, including Slavic. However, aware of the distinction between CA and VA made in Kabakčiev (2000) – see Verkuyl's (2001) large review of my work (Kabakčiev 2000) – he never produced convincing data and arguments that CA is universal "as is", without drawing a distinction between CA and VA and without pinpointing the specifics of VA. As for Borer and Borik, they assign to Verkuyl's theory a defect, namely, inapplicability to languages with VA and without articles – that is actually a defect of their own approach and consists in the failure to distinguish between CA and VA systems. The wrong assumption that CA is directly applicable to all languages led to the wrong conclusion that Verkuyl's theory is defective or with an insufficient explanatory power. Verkuyl's theory is a gigantic breakthrough in linguistics and its explanatory power is enormous. But it needs to be complemented by a correct conceptualization of CA as a mirror image of VA, the mechanism of mapping temporal values between

referents of verbs and nominals, and the inverse dependence between markers of boundedness in verbs and nouns across languages¹⁵.

Mass Failure No 1 in CA Theory: Assumption of an Atemporal Approach Instead of a Temporal

My approach, treating all referents of participants as temporal (see above, also Kabakčiev 2000, Kabakčiev forthcoming) easily overcomes the impasse inherent in atemporal approaches (Krifka 1989, 1992, 1998, Filip 2000, 2017, Padučeva 2004, Borer 2005, Borik 2006, MacDonald 2012, Tatevosov 2015, Fleischhauer and Czardybon 2016). In many publications the atemporal, hence spatial, boundedness of a participant in a situation is claimed to be mapped onto the verb, making the verb's aspectual value bounded. Most popular among atemporal approaches is the one exploring the so-called incremental-theme verbs, purported to be "convenient for explaining perfectivity". Incremental-theme verbs are mainly verbs of creation and annihilation (consumption). They are held to acquire perfectivity within VPs because of the spatial boundedness of the argument – created or annihilated. For example, *a fig*, when consumed entirely, as in *The boy ate a fig*, is said to "measure out" the eating of the fig. Let us carefully analyze the reasoning behind the "measuring-out". Exactly how can the spatial boundedness of *a fig* translate into the temporal boundedness/perfectivity of *ate* in *ate a fig*? For some seemingly strange, but actually very clear reason (see below), the participant *the boy* rarely, if ever, draws the attention of the followers of the incremental-theme trend. Their attention is fixed on the object to be consumed, and their reasoning goes like this. The argument *a fig*, being something bounded through the article, transfers its boundedness onto the verb. *A fig* is regarded as a physical object, which means that the boundedness is spatial. And as the boundedness of *a fig* in *The boy ate a fig* is spatial, the explanation, offered in hundreds of publications on incremental-theme verbs, amounts to a formulation (well articulated in Padučeva 2004: 50) that the spatial boundedness of objects transforms into the temporal boundedness of the verb.

How can spatial boundedness turn into temporal boundedness? This is *an outright mystery* – that would surely be welcomed in a fairy tale or a fantasy novel. But its place in linguistic analyses is questionable, to say the least. Indeed, as was to be expected, at one point a major advocate of the incremental-theme approach recognized the problem: "Take as an example the reading of a book; every part of the book corresponds to a part of the reading and vice versa. With other thematic relations, these properties normally do not obtain; for example, there is no correspondence between parts of the person that is reading and the reading event" (Krifka 1992: 44). This is the reason why the participant *the boy* in sentences like *The boy ate a fig* rarely, if ever, draws the attention of the advocates of the incremental-theme trend. Because if the

¹⁵See the inverse dependence between markers of boundedness in verbs and nouns in Kabakčiev (2000: 153-161).

consumption of *a fig* appears to match the physical constitution of the fig, there is nothing similar that can be said to happen to *the boy* as regards the eating of the fig. Hence, in order not to compromise the approach with revelations such as Krifka's, its supporters were quick in clothing the problem in bizarre jargon. The miraculous transformation of spatial features into temporal ones was labeled "homomorphism" (Krifka 1992)¹⁶; "a theory called mereology"¹⁷, was harnessed to help explain how spatial features happen to metamorphose into temporal ones (Krifka 1998, Filip 2000, 2017). But, of course, the problem will always, mercilessly, persist: it can be assumed that a part of a book corresponds to a part of reading it, but it cannot be assumed that parts of a person reading correspond to the reading – as Krifka honestly admitted. Whether Krifka noticed the incompatibility between the incremental-theme approach and Verkuyl's postulate that the aspect of a sentence is a result of the impact of all the components, not just of the object on the verb, is unclear. In any case, the incompatibility, which otherwise simply does not exist in a temporal model, is a fact.

Another problem of the atemporal incremental-theme trend is that its supporters, struggling to explain perfectivity as described above, turn a blind eye to the circumstance that incremental-theme verbs are a tiny portion of all verbs in a language capable of explicating perfectivity. As I put it recently, "it does not matter whether you *draw/eat an apple* or *cut it, throw it, notice it, prefer it* or *forget it*. While only the first two are verbs of creation/ consumption, all the phrases above are perfective (prototypically, not always), and in a stable theory of aspect it is the perfectivity of all of them that has to be explained – not just of those with incremental theme verbs" (Kabakčiev 2018: 967). In my approach to the status of participants in situations, a purely temporal one (Kabakčiev 2000, Kabakčiev forthcoming), there is not a trace of doubt as to how mapping takes place. It is realized as *a transfer of temporal values* – no matter whether these are accommodated in nominal or verbal language structure.

Mass Failure No 2 in CA theory: Ignoring the Mechanism of Mapping Temporal Values, Coupled to a Misunderstanding of the Function of the Article

There are certain minor exceptions to the trend of ignoring the mechanism of mapping temporal values. For example, some peripheral statements in two publications by Slabakova (1997, 1998) point to temporal features of nominals and the possibility for a verb to impart "its temporal properties to the object NP" (Slabakova 1998: 77). The major exception to the mass inclination to bypass the issue of NP temporal values is, to my knowledge, Bulatović (2013; 2016) – her publications show that she follows a temporal approach, albeit one that

¹⁶Krifka (1992): "consider mapping to events and mapping to objects, the two relations which constitute the core of the construction of the homomorphism from objects to events".

¹⁷Mereology (Greek *meros* "part", Ancient Greek *lógos*, "word, speech"), dealing with wholes and their parts.

needs sophistication. But although the temporal approach is not popular, it is one that offers a definitive solution to several of the most fundamental issues in the CA theory, as already demonstrated.

As for the hypothesis for a rejection of the mechanism of mapping temporal values or of the inverse dependence between markers of boundedness in verbs and nouns, there are two publications (Czardybon and Fleischhauer 2014, Fleischhauer and Czardybon 2016) challenging my theory of the article-aspect interplay (Kabakčiev 2000) and providing some linguistic analysis, though not relevant to the challenge. There is something to emphasize here, however. My temporal approach may, indeed, be not very popular, but my theory of the inverse dependence between markers of boundedness (described below) is not solitary in aspectology. In the year of publication of my book on CA (Kabakčiev 2000), Leiss' conception of the article-aspect interplay also appeared (Leiss 2000). According to Leiss, the emergence of the definite article in three Proto-Germanic languages, Old Icelandic, Gothic and Old High German, is the result of the gradual loss in these languages of perfective verbs. The two conceptions, Leiss' and mine, complement each other and could even be regarded as one theory, establishing an article-aspect interplay: simultaneously synchronic and diachronic, across millennia and across languages that are very different grammatically.

Both Leiss' conception and my idea of the article functioning as a grammatical entity marking temporal boundedness on nominals (and hence perfectivity after the effectuation of the mapping mechanism) are rejected by Fleischhauer and Czardybon (2016). The authors' argumentation? It equals nil. They offer *no argumentation*, evading the scientific burden of proof (Kabakčiev 2018). Furthermore, strangely, their rejection of the aspectual function of a determiner is directed solely towards the definite article. Similar peculiar reasoning, divorcing the definite article from the indefinite one, is offered by Młynarczyk (2004: 69). Indeed, in a footnote in a previous publication Czardybon and Fleischhauer (2014: 392) mention the indefinite article as a quantization device, but insist that quantization is not enough to guarantee perfectivity. Why do they think quantization is not enough to guarantee perfectivity – or, in their phraseology, "is not enough to yield a telic predication"? Their answer: the definite article is not sufficient to yield a telic predication because "it is also compatible with an atelic predication", as in *She ate the sandwich in/for five minutes* (Czardybon and Fleischhauer 2014: 392).

First, as these gentlemen insist that sentences such as *She ate the sandwich* or *Peter ate the apples in ten minutes* are perfective, or, in their phraseology, "express a telic predication due to the referential properties of the incremental theme argument" (Czardybon and Fleischhauer 2014: 379), the following question begs to be put forward to them. Since *She ate the sandwich* and *Peter ate the apples* are equivalent to sequences such as *The/A woman ate the sandwich* and *The man/A man ate the apples*, what exactly is it in sequences or sentences like these that guarantees the explication of perfectivity? The answer is clear, and consists of two parts: (i) the thing that *cannot* guarantee the explication of perfectivity is the verb *ate* – because it takes part in both perfective

(*The/A woman ate the/a sandwich*) and imperfective sentences (*The/A woman ate sandwiches*); (ii) the thing that **guarantees** the explication of perfectivity in such sentences **is the article** – be it the definite article or the indefinite one, as seen in the four possible versions of the sequence *The/A woman ate the/a sandwich*, and as explained in detail above.

Second, the two authors' assertion that "the definite article is not sufficient to yield a telic predication" implies, and actually requires, that an additional device be found to "yield a telic predication" in sequences such as *The/A woman ate the/a sandwich*. Let us look for such a language device in one real sentence, *The woman ate the sandwich*. Recall that Verkuyl's theory identifies the telicity of the verb to be a necessary element for triggering perfectivity. However, what Czardybon and Fleischhauer (2014: 392) have in mind in their assertion that "the definite article is not sufficient to yield a telic predication" is obviously **not** the verb *ate*, as their assertion holds precisely for sentences such as *She/The woman ate the sandwich*, i.e., containing the verb *ate*. Hence, if the definite article and the verb are not sufficient devices for the explication of perfectivity, what is it in *The woman ate the sandwich* that triggers the perfectivity? I am afraid that, apart from the lexical meanings of the nominals *woman* and *sandwich*, there is simply nothing else left to generate perfectivity. Could the lexical meanings of *woman* and *sandwich* trigger perfectivity? I am afraid not. Furthermore, it must be heavily emphasized here that the analysis of *The woman ate the sandwich* is not at all a discussion of a single sentence. It is a discussion of the properties and functions of a super-gigantic semantico-syntactic schema, embracing millions of similar sentences and coinciding with Verkuyl's perfective schema. The schema serves as a nucleus for explicating perfectivity through two prototypical participants: a bounded agent performing a bounded action, the action falling onto a bounded object!

Third, the two gentlemen's insistence that sentences such as *Peter ate the apples in ten minutes* express "a telic predication due to the referential properties of the incremental theme argument" reveals that they are unaware of one of the fundamental tenets in the CA theory: aspect is explicated at the level of the sentence, not at the level of its components. In simpler terms, if *Peter ate the apples* "expresses a telic predication", this is **not** due solely to the referential properties of the incremental theme argument but is also due to the subject *Peter* being temporally bounded through a hidden article *the*! This becomes clear when the subject *Peter* is replaced by *ants*. Cf.: *Ants ate the apples* – this sentence is prototypically imperfective, for reasons explained above (and in Kabakčiev 2000). It appears that the awareness of certain fundamental CA tenets is a requirement a bit too high to meet.

In any case, the analysis above demonstrates that not only is Czardybon and Fleischhauer's reasoning deviant, the wrong statement "the definite article is not sufficient to yield a telic predication" re-confirms, even if indirectly, the major thesis, launched 35 years ago (Kabakčiev 1984a, 1984b) and later made more sophisticated (Kabakčiev 2000), that the article – both the definite and the indefinite – in English and similar languages is **a marker of boundedness**

that guarantees the explication of perfectivity through the mechanism of mapping temporal values between referents of nominals and verbs¹⁸.

On the Markers of Boundedness in Verbs and Nouns

According to Abraham and Leiss (2012: 326), "the first researcher to note that languages develop either a category of aspect or an article system was the Bulgarian linguist Kabakčiev (1984b, 2000)". Indeed, as already claimed, one of my most essential conjectures within the CA theory is that there exists an inverse relationship across languages between markers of temporal boundedness on verbs and nouns. If a language lacks markers of temporal boundedness in verbs, they are found in nouns; and vice versa, if a language lacks markers of temporal boundedness in nouns, they are found on verbs. I outlined this interdependence in Kabakčiev (1984a, 1984b) and later developed and elaborated it (Kabakčiev 2000). The markers of temporal boundedness in verbs are prototypically represented by the perfective aspect, as in the Slavic languages. The markers of temporal boundedness on nouns are prototypically represented by the definite and the indefinite article, as in English and other modern Germanic languages. In languages like Finnish the markers of temporal boundedness are also located on nouns, but these markers are not articles. The encoding of temporal boundedness in Finnish is executed by the nominative and the accusative case. The marker of temporal non-boundedness in languages like English is the zero article; in languages like Finnish it is the partitive case. There are hybrid languages too, manifesting a mixture of markers of boundedness and non-boundedness on verbs and nouns. Among these languages are Bulgarian and Greek – featuring simultaneously the perfective aspect in verbs and a definite article, but no indefinite article. The theory of the inverse relationship across languages between markers of temporal boundedness in verbs and nouns complements Leiss' (2000) theory of the link between the disappearance of perfectivity in the verb and the appearance of a definite article in Proto-Germanic¹⁹.

Three decades after the revolutionary discovery of CA, in a review of Kabakčiev (2000), Verkuyl (2001) argued that "we are at the beginning rather than in the final stage of theory formation about tense and aspect". The mass

¹⁸ A recent paper rejecting the aspectual function of the article, using an exclamation mark as its only "argument" and offering the revelation that a theory of aspect is simply impossible, is Pátrovics (2017). Its form of evading the burden of proof is drastic. Instead of an analysis of at least a single sentence, the author offers free reasoning accompanied by a philologist's understanding of theoretical physics.

¹⁹ An anonymous reviewer points to the need for a typological study across languages to confirm (or disprove) the inverse relationship between markers of temporal boundedness. While the suggestion is, without doubt, absolutely reasonable, such an enterprise will require enormous resources (both material and intellectual) to identify the relevant data, including for languages that are severely understudied, and to pinpoint the internal mechanisms for every language – and these will surely be intricate (cf. those for English described above). Definitely a grand task – that stands before research teams and institutions rather than separate enthusiasts.

failure of researchers to recognize not only the mechanism of mapping temporal values, to which Verkuyl (2001) does not subscribe, but also some of the fundamental tenets of his own model – for example, that aspect is explicated at the level of the whole sentence, appears to lend credibility to his 2001 position and to suggest that it might, unfortunately, be valid even today. I do not share such an opinion. The fact that there are publications leading the CA theory astray, no matter what percentage of all writings they are, cannot weaken or damage it.

Prospects for the Development of CA

Apart from some efforts described above to challenge Leiss' (2000) and Kabakčiev's (2000) theory of the aspect-article interplay, there have been, to the best of my knowledge, no other attempts at refuting it within the two decades after its publication separately by the two authors. It is a pity, however, that Leiss' (2000) extremely insightful theory of the rise of the definite article in parallel with the demise of verbal aspect in Old Germanic remains ignored by specialists in Proto-Germanic. A brand-new large study specifically devoted to article emergence in Old English only mentions in a footnote Leiss' work and the possibility for the emergence of articles in the Germanic group to be due to the loss of aspect (Sommerer 2018: 47). Given that Leiss' theory handles the heart of the matter, it would have been natural for Sommerer to analyze Leiss' theory and to endorse or reject it; she sidesteps it instead. On the other hand, the absence of proof that Leiss and Kabakčiev's theory of the aspect-article interplay is wrong – for almost twenty years already, constitutes support for its viability. Two decades is more than a sufficient period for critics and disbelievers to find contradicting data, formulate the necessary argumentation and refute a theory.

The heuristic potential of CA, including the theory of the inverse dependence of markers of boundedness and Leiss' theory of the emergence of articles in the Germanic languages as a result of the loss of aspect were recently put to the test by myself, in a study of aspect in Old English (Kabakčiev forthcoming). Among the conclusions is that: "from the point of view of the continuum between VA languages and CA languages, where Proto-Indo-European and the Slavic languages occupy one end (VA), and most modern Germanic languages (English, German, Dutch, etc.) occupy the opposite end (CA), Old English is a very interesting hybrid language with its remnants of VA and at the same time a CA system featuring no definite article at one stage, and a gradual emergence of a definite article (and later an indefinite one) in following stages". Thus, provided these conclusions are correct, of course, the theory of CA with the inverse dependence of markers of boundedness and Leiss' aspect-article diachronic link proves capable of providing a description of an extinct language, Old English, with a grammatical system that is completely different from Modern English.

Another area for future applications of the CA theory is grammar, with a complete absence of information on CA in English grammars – a defect in a sphere important for the whole of humanity (in view of the world status of the English language) that went almost unnoticed for decades after the discovery of CA (but see Schüller 2005). My English grammar (Kabakčiev 2017) uses the CA theory to explain in a uniform way tense, lexical meanings of verbs and nouns, the articles (*a*, *the*, the zero article) and time adverbials for the signaling of aspect, and this makes it the first grammar to use CA in the description of English (see Bulatović's 2018 review of it)²⁰. It was several years earlier that a publication by Bulatović (2013) had raised, for the first time in linguistics, very serious and detailed criticism against the treatment of aspect in English grammars and voiced the need for them to include CA. Apart from opening the eyes of the linguistic community as regards the conspicuous need for certain major issues in English grammar (among which tense, articles, time adverbials) to be explained through the CA theory, Bulatović's (2013, 2016) work actually confirms that CA is such an essential phenomenon in English and similarly structured languages (Dutch, German, and actually the large majority in the Germanic group) that not only foreign learners but also teachers and educated native speakers of these languages will profit immensely from acquiring the knowledge of it.

Conclusion

The theory of CA, almost half a century old already, is not a thing of the past! It is still developing – with the inevitable vicissitudes and issues – and has a lot more to offer. It should appropriately deal with the trends leading to dead ends and be enriched by novel ideas and approaches. Possible directions of future research? The heuristic potential and the explanatory power of the theory of the inverse dependence of markers of boundedness in verbs and nouns, with the underlying conception of the temporal nature of all participants in situations, could be applied to any natural language: living or extinct, located anywhere on the planet, comprehensively studied or not, related or non-related to the languages that are already well-known. The mechanism of mapping temporal values between nominals and verbs in the sentence could be applied to languages with VA systems also – to see exactly how verbs map their temporal properties onto nominals and what effects this brings into the semantics of sentences and the general grammatical and lexical structure of the relevant language. The CA system itself, as known today and discussed predominantly on English and Dutch data, can, and must, be extensively analyzed on data from other Germanic languages as well – to see exactly how these languages differ from English and Dutch. For example, German considerably differs from English in its tense

²⁰Huddleston and Pullum's (2002: 118-125) solitary recognition (first in a comprehensive grammar of English) that the perfective/imperfective contrast exists in English is a ray of hope for the future of English grammars.

system, hence it also differs significantly in its arsenal of devices for explicating perfectivity and imperfectivity.

Finally, as the short reference above to Finnish shows (a language with a case system serving the explication of aspect), the theory of CA can be expected to undergo considerable progress and be especially enriched if applied to languages that are structurally very different (e.g., tenseless, without VA, without articles and/or cases related to aspect – in various combinations of these features) from the well-known modern Indo-European ones used so far in its development.

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