On the History of Compositional Aspect:

Vicissitudes, Issues, Prospects

Compositional aspect (CA) is a fundamental language phenomenon found 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.

Keywords: Compositional Aspect, Verbal Aspect, Markers of Boundedness, Mapping of Boundedness and Non-Boundedness.

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 the 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, to the end of the 1960s, maintained that aspect – not only called verbal aspect (henceforward VA) until then but also regarded solely as such, represented exclusively by verbs as lexical entries and restricted to the Slavic languages, plus some others, 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 situations.¹

In Verkuyl’s (1972) theory, aspect, represented by the distinction between perfectivity and imperfectivity,² 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

¹ “Participants in situations”, also called “nominal sentence components (or nominals) taking part in the explication of aspect”, is my term, launched in Author (1984b: 670); the one more frequently employed is “arguments”. I take participants in situations to be a term better suited to CA analyses.
² Verkuyl (1972) used the (now exotic) terms non-durativity (for perfectivity) and durativity (for imperfectivity).
(in terms of Vendler’s 1957 model of situations), 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 point. 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 Slavic (Dahl 1975; Comrie 1976). Until the end of the 1960s 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

\[\text{\textsuperscript{3}}\text{ Vendler’s classification of situations, consisting of four members, states, activities, accomplishments and achievements, is so widely known today that knowledge of it presupposed.}\]

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

**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

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\(^5\) I proposed the notion “explication” in Author (2000). In my English grammar (Author 2017), I mainly use the term signaling for the same phenomenon.
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. s’elPFV smokvu  
   ‘The boy ate a/the fig’  
d. Mal’chik elIMPV 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 Russian s’el ‘ate’ expresses
perfectivity, English *ate* only explicates/signals it. The same with Russian *el*
‘ate’ in (1d) – it expresses imperfectivity, while 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 that (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:

(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 entries and feature a regular pattern of a definite and an indefinite
article, while, conversely, Slavic languages feature verb aspect and most of
them have no articles, neither Verkuyl, nor the already innumerable followers
of 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 notions such as 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&Czardybon 2016; see Author’s 2018 response), ignoring tons of
argumentation provided years earlier (Author 2000). Some (Berezowski 2011)

Aspect is a grammatical category found in Slavic verbs as lexical entries. A verb is either
perfective or imperfective, save for biaspectral 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.
explore the zero article and make no mention of its unbounding function; others (Husband 2012) ignore the article (*the* & *a*) despite handling Verkuyl’s theory – 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 (Author 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 be demonstrated through time adverbials. For instance, adding an adverb of non-bounded iterativity (*often, regularly, from time to time*) changes a sentence such as (1a) from a perfective into an imperfective one, cf. (4a) below; adding adverbials signifying 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
(Author 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” (Author 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 \textit{visited a castle}
vis-à-vis the imperfectivity of \textit{visited castles}, as in (5b). The perfectivity of (5a)
is due \textit{simultaneously} to the boundedness of \textit{the tourist} and \textit{a castle} and the
presence of a telic verb, \textit{visited}, the three elements \textit{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 (\textit{castles} – unbounded by the bare
plural); (5c) is imperfective because of a subject leak (\textit{tourists} – non-bounded);
(5d) is imperfective because of a leak in the verb (\textit{knew} – atelic, in contrast to
\textit{visited} – telic). Finally, (5e) is imperfective because of two Verkuylian leaks:
one in the subject, another in the object (Verkuyl 1972; 1993):
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; Zydatiß 1976: 54; Heinämäki 1978: 10; Dowty 1979: 3-64; Markkanen 1979: 54-57; Carlson 1981; Mourelatos 1981). 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 Slavic. It was revealed in 1984, in two articles of mine (Author 1984a; 1984b), which demonstrated the cross-language significance of CA. Elements of language structure, viz., the presence of verb aspect, as in Slavic, and the regular pattern of an article (definite and indefinite), as in Germanic, underlie the big difference between the two groups of languages. In a publication dealing with English aspect Bulatović (2013: 65) points to the works of Vendler, Verkuyl and Author as “the cornerstones of what is known today as compositional aspect” – a laudatory assertion but in need of an explanation of what I did. After the two 1984 papers I first made a detailed assessment of Verkuyl’s theory (Author 2000) in both his initial work and its

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7 The 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).
later version (Verkuyl 1972; 1993). 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 (Author 2000). Third, I rendered CA in languages like English as *a mirror image* of VA in Slavic and similar languages, and, consequently, VA in Slavic as a mirror image of CA in Germanic (Author 2000: 153-161). Fourth, the idea 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 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 Author (2000: 239). There can

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8 The analysis of Verkuyl’s work occupies a large part of my 400-pages monograph (Author 2000).
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 a perfective context cannot be found – or specially built. Preoccupied with finding and selecting language data and preparing the complex argumentation for the validity of his schemata, it is understandable why Verkuyl 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 as a default (primary/prototypical/basic) reading, and that, analogously, sentences like (3) are imperfective as a default (Author 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”). 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-quantified. 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” (ibid.). These statements on “quantified” and “non-quantified” are not unambiguous. But the following one leaves no doubt as to the temporal nature of participants: “the category SPECIFIED could be characterized 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

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9 A 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” (Author 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 (Author 2000: 238).

10 “Quantified” is Verkuyl’s term. Other studies employ the term “quantized” – with the same meaning.
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 papers outlining the significance of CA and its relationship with VA (Author 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 (Author 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 (Author 2000: 123-151). 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.

11 The 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 (Author 2017: 227) that can accommodate any aspectual value arising in the sentence or context.
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 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 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”, 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 appearance.

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 Author (2000). Note

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12 The individual-stage distinction goes back in linguistics to Carlson (1977) and Quine (1960). 13 On the necessity for 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 Author (2000; 2019).
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 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 material objects (castle, castles) 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 signifies temporal non-boundedness (love, beauty, ineptitude, pride); see Author (2000) for tons of 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 Slavic in Author 2000: 155ff, 300). Regrettably, this extremely important aspect of CA theory, temporality of participants, remains today systematically sidestepped by aspectologists, with some exceptions (Bulatović 2013; 2016; to appear). 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 two sections above 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 Author 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 \textit{visited} and on the VP \textit{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 \textit{the tourist} and see exactly how its final temporal constitution arises.

The analysis started with the assumption that to be able to utter \textit{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 \textit{the tourist}, \textit{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, \textit{the tourist} in \textit{The tourist visited castles} is an entity with a temporal status exactly

\textbf{equivalent} to the temporal status of \textit{castles}. But this non-bounded temporal
status of \textit{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 \textit{the tourist}, viz., non-bounded iterativity, is

\textbf{forced (mapped) on it, despite the article!} Initially by the participant \textit{castles},
and then by the VP \textit{visited castles}. Cognitive science may for the time being
know very little about what happens in speakers’/hearers’ heads when
sentences like these are interpreted, but there can hardly be any doubt that the
mapping described above does take place in the brain!

With the explanation above, now it can easily be assumed that \textit{the tourist}
is an unidentifiable number of tourist stages in the vision and mind of the
speaker uttering \textit{The tourist visited castles}. The assumption makes sense in
everyday terms too. For the speaker of \textit{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. 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 Author 2000: 123-151; 2019).

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 nominals – 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 Author (2000, also using diagrammatic representations) and in Author (2019). 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 Slavic, and exactly what consequences it brings about, this is an issue in need of future research.

14 Of course, indefinitely recurring does not mean recurring forever but recurring an unknown number of times.
The Failure to Recognize the Two Different Types of Aspect: CA and VA

The assumption that Verkuyl’s CA theory, characteristic of languages like 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 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 Slavic too. Borer (2005: 124, 187) writes that there are languages that mark perfectivity directly on the verb, i.e., boundedness in Slavic 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 Slavic.

Structurally Germanic and 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 Germanic and Slavic in terms of what articles and their absence can do, something explained years earlier on the basis of the thesis that aspect takes two separate forms, CA and VA (Author 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).
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 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 Slavic: as VA.
This means that from the very discovery of CA in 1972 it was 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 Author (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 Author (2000) – see Verkuyl’s (2001) large review of Author (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 languages.15

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15 See the inverse dependence between markers of boundedness in verbs and nouns in Author (2000: 153-161).
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 Author 2000; 2019) easily overcomes the impasse inherent in atemporal approaches (Krifka 1989; 1992; 1998; Filip 2000; 2017, Borer 2005, Borik 2006; MacDonald 2012, Fleischhauer&Czardybon 2016). In many publications the atemporal, hence spatial, boundedness of a participant in a situation is purported 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 thanks to the spatial boundedness of their arguments – 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 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 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

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16 (Krifka 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.”

17 Mereology (Greek *meros* ‘part’, Ancient Greek *lógos*, ‘word, speech’), dealing with wholes and their parts.
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 just a very 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” (Author 2018: 967). In my approach to the status of participants in situations, a purely temporal one (Author 2000; 2019), there is not a trace of a 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.
There are some 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 this trend (to my knowledge) is Bulatović (2013; 2016; to appear). Her publications show that she follows a temporal approach, albeit one that 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 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 & Fleischhauer 2014; Fleischhauer & Czardybon 2016) challenging my theory of the article-aspect interplay (Author 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 (Author 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, Czardybon (2016). The authors’ argumentation? It equals nil.
They offer no argumentation, evading the scientific burden of proof (Author
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, 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, 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, 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, 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 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 Author 2000). It appears that 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 (Author 1984a; 1984b) and later sophisticated (Author 2000), that the article – both the definite and the indefinite – in English and similar languages is a marker of boundedness that guarantees the exlication of perfectivity through the mechanism of mapping temporal values between referents of nominals and verbs.\(^{18}\)

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 Author (1984; 2000)”. Indeed, as already claimed, one of my most essential conjectures within CA theory is that there exists an inverse relationship across languages between markers of temporal boundedness in 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

\(^{18}\) 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.
temporal boundedness in nouns, they are found in verbs. I outlined this interdependence in Author (1984a; 1984b) and later developed and sophisticated it (Author 2000). The markers of temporal boundedness in verbs are prototypically represented by the perfective aspect, as in Slavic. The markers of temporal boundedness in 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 in 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 in verbs and nouns. Among these languages are Bulgarian and Greek – featuring simultaneously 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-Germanic.

Three decades after the revolutionary discovery of CA, in a review of Author (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 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 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
Author’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 Germanic 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 – probably for being unable to
understand and interpret it. On the other hand, the absence of proof that Leiss
and Author’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 Germanic as a result of the loss of aspect were recently put to the test by myself, in a study of aspect in Old English (Author 2019). Among the conclusions is that: “from the point of view of the continuum between VA languages and CA languages, where Proto-Indo-European and Slavic occupy one end (VA), and most modern Germanic language (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 in 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 completely different from Modern English.

Another area for future applications of CA theory is grammar, with the complete absence of CA in English comprehensive grammars – a defect that remained unnoticed for decades (but see Schüller 2005). The first publication that raised serious criticism against the treatment of aspect in English grammars and voiced the need for them to include the principles of CA is Bulatović (2013). As shown by the author in a review of my grammar (Author

19 Huddleston and Pullum’s (2002: 118-125) solitary recognition that the perfective/imperfective contrast exists in English is a ray of hope.
2017), its focus is CA, which makes it the first English grammar published in English to use CA theory in the description of English (Bulatović 2018). Bulatović has also authored a review article of several English grammars, voicing again the appeal for grammars to include CA (Bulatović, to appear), as well as a paper in which tests delivered to her students show that the application of CA theory to English language teaching can bear fruit. She argues that English learners whose native tongues lack articles and feature VA will benefit from getting acquainted with at least the basics of CA (Bulatović, unpublished manuscript***). In my opinion, Bulatović’s publications actually confirm that CA is such a significant phenomenon in English and similar languages that not only their learners but also teachers and educated native speakers will profit a lot from acquiring knowledge of it.

Conclusion

CA theory, born five decades ago, is not dead! CA theory is not a thing of the past! On the contrary, it is developing – with the inevitable vicissitudes and issues – and has a lot more to offer. But 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 also be applied to languages with VA systems 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 we know it today 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.

The fascinating theory of CA is expecting new explorers: insightful and enthusiastic!
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[***This is an unpublished manuscript under review at a journal for a year already. Approved but resubmission required after revisions. Resubmitted Jan’2019. If accepted, I will notify and correct accordingly. If rejected, I will remove it.]


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