

Ukrainian Biaspectuality: An Instantiation of Compositional Aspect in a Verbal-Aspect Language

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Abstract. Aspect, the perfective-imperfective contrast, is a universal phenomenon, part of man's cognitive organization to reflect objective/subjective reality by conceptualizing referents of verbs and of nominals/NPs standing for participants in situations as temporal entities, residing in speaker-hearers' heads and interacting between each other. Aspect is instantiated across languages through two archetypes: verbal aspect (VA) – grammatical, as in the Slavic languages, including Ukrainian; compositional aspect (CA) – complex semantico-syntactic, sporadically dependent on pragmatic discourse elements, as in English. The paper explores Ukrainian language data to, first, confirm that CA, realized mainly as a very complex interplay of sentence components, exists not only in CA languages but, albeit peripherally, also in VA languages, including Ukrainian. Second, to find out how Ukrainian aspect is realized in sentences with biaspectual verbs and particular numbers of situation-participant NPs: three, two, one. The referents of verbs and of nominals/NPs standing for participants in situations in both VA and CA languages are part of the never-ending process of thinking and perpetual resorting to memory and is not some abstract self-contained system of symbols divorced from human cognition. Phrased otherwise, aspect, especially CA, cannot be understood within the domain of traditional grammar and mainstream linguistics with their naivist notions ignoring man's cognitive capacity and maintaining, inter alia, that nominals/NPs are concrete/physical or abstract entities. The study of matter is ordained to physics. Linguistics is obliged to investigate not the material world but how language reflects this world and other possible (imaginable) worlds. A simple analogue is a woman in a mirror: it is not a material object but an image of a woman; likewise, a woman referred to through language is not a material object but a token of a woman. Hence, NP referents of material things are not physical entities but *images* of such entities, fully describable, and their kineticism is handled by verb referents, whereby the intricate CA mechanism, which is cognitive, can be observed, albeit peripherally, also in VA languages, including Ukrainian.

Keywords: *compositional and verbal aspect, Ukrainian, biaspectuality, NP-V-NP mapping of (non-)boundedness.*

Бакарджиєва-Моріканг Світлана, Кабакчієв Красимир. Двохаспектність в українській мові: приклад композиційного аспекту у вербально-аспектній мові.

Анотація. Аспект, протиставлення доконаного й недоконаного виду, є універсальним явищем, частиною когнітивного процесу людини, для відображення об'єктивної/суб'єктивної реальності шляхом концептуалізації референтів дієслів та номіналів/NPs, які означають

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учасників ситуацій тимчасовими сутностями, які знаходяться в головах мовця та слухача, і взаємодіють між собою. У мовах аспект/вид інстанціюють два архетипи: вербальний – граматичний, як у слов'янських мовах, включно з українською, та композиційний, який є складним семантико-синтаксичним, спорадично залежним від прагматичних елементів дискурсу, як, наприклад, в англійській мові. У статті досліджено україномовні дані, щоб перше, підтвердити, що композиційний аспект, який реалізується переважно як складна взаємодія компонентів речення, існує не лише в мовах композиційного виду, але, хоч і периферійно, також у мовах вербального виду, включно з українською. По-друге, з'ясувати, як реалізується український вид у реченнях з двовидовими дієсловами та певною кількістю NP учасників ситуації (трьома, двома чи одним). Референти дієслів та номіналів/NPs, що позначають учасників ситуацій як у вербальному, так і в композиційному видах є частиною безперервного процесу мислення та постійного сортування пам'яті, а не якоюсь абстрактною самодостатньою системою символів, відокремлених від людського пізнання. Інакше кажучи, вид, особливо композиційний, не можливо зрозуміти в межах традиційної граматики та популярної лінгвістики, з їхніми наївистичними уявленнями, які ігнорують когнітивні можливості людини та стверджують, зокрема, що номінали/NP є конкретними/фізичними чи абстрактними сутностями. Вивчення матерії є цариною фізики. Лінгвістика має досліджувати не матеріальний світ, а те, як мова відображає цей світ та інші можливі/уявні світи. Простий аналог – жінка в дзеркалі: це не матеріальний об'єкт, а відображення жінки; так само ця жінка не є матеріальним об'єктом, а символом жінки. Таким чином, NP-референти матеріальних речей є не фізичними сутностями, а образами таких сутностей, які повністю описуються, їх кінетичність обробляється дієслівними референтами, завдяки чому складний механізм композиційного аспекту, який є когнітивним, можна спостерігати, хоч і периферійно, також в мовах вербального виду, зокрема в українській.

Ключові слова: композиційний аспект, вербальний аспект, українська мова, біаспектнуальність, відображення (не)обмеженості NP-V-NP.

Introduction

Mapping (Non-)Boundedness from the Verb onto Situation-Participant NPs and Vice Versa

Published in *East European Journal of Psycholinguistics* (10/1) is a paper describing the mapping of (non-)boundedness from the verb component onto situation-participant NPs in Bulgarian sentences with perfect verb forms with aorist and imperfect participles, respectively (Kabakčiev, 2023), as part of the general phenomenon of aspect arising from man's cognitive and linguistic capacity. This capacity underlies the realization across languages of the major structural instantiation of aspect, the perfective-imperfective distinction (Ukrainian *dokonanoho-nedokonanoho vydu*) – among other aspect distinctions, e.g., the contrasts between aorists-imperfects or progressives-nonprogressives. This paper offers further illustration of our conceptualization of aspect, hence it would best be read in conjunction with the previous one.

In our understanding, the universal category of aspect exists structurally in various disguises, but languages can be categorized into two archetypes: VA languages and CA languages. In the former, aspect, and in particular perfectivity, is typically located in verbs as lexical entries and is grammaticalized. In the latter, aspect is realized at the

sentence level as an extremely complex interplay between the verb and the relevant nominal components – situation-participant NPs.¹ Representatives in Europe of VA languages are all the Slavic ones, Lithuanian, Greek, Georgian. Outside Europe, a major example of a VA language is Chinese. CA languages in Europe are the modern Germanic ones, with English as the most studied, the Romance languages, Finnish, Albanian. CA was discovered as a cross-language phenomenon in 1971 by Henk Verkuyl (1972; 1993; 2022). The discovery triggered the development of CA theory, further sophisticated until the present day by Verkuyl himself and other researchers (Heinämäki 1974/1978; Dowty 1979; Carlson 1981; Krifka 1989; 1998; Kabakčiev 1984; 2000; 2019; Bulatović 2013; 2020; 2022; Vounchev 2007; Dimitrova 2021, to name but a few). According to a long-established model followed here (Kabakčiev 1984; 2000; 2019), in VA languages it is the verb that determines the aspect of a sentence as perfective or imperfective and, conversely, aspect in CA languages is identified primarily on quantificational information carried by NPs standing for situation participants.² But in VA languages, although aspect in the sentence is directly denoted by the verb and the other components have little or no impact on it, the aspect value of the verb governs the temporal range and some other semantic values of situation-participant NPs. In CA languages, aspect is not anchored in the verb, it is an interplay between features of the verb, NPs and adverbials, plus some other factors. In VA languages the same is observed in sentences with biaspectual verbs, where aspect is again not a feature of the verb but an interplay of sentence components.

Ukrainian Aspect and the Biaspectuality Phenomenon

Ukrainian grammars and other linguistic publications deal exclusively with VA. CA theory is not used on Ukrainian data; publications very rarely discuss it, peripherally (e.g., Chaika et al. 2024). For Ukrainian linguists, aspect resides entirely within the confines of verbal lexical semantics and morphology (Bezpoiasko et al. 1993; Pavliuk 2010; Kalko 2012; Gladush & Pavliuk 2019; Sokolova 2016; 2020), whether regarded as grammatical or hybrid, lexico-grammatical. This understanding follows – expressly or tacitly – Jakobson’s (1957) conception of aspect as a phenomenon that has nothing to do with participants in situations. Jakobson’s definition, proposed by a respected author and highly acclaimed for decades, ultimately turned out to be wrong, as, according to the CA theory, aspect does not belong to the verb but results from a very complex interplay between sentence components and especially NPs, whereby the verb, being aspectually ambivalent, plays a relatively minor role in the effectuation of aspect.

As for biaspectuality, in contrast to most Slavic languages where it is a well-known phenomenon (Kabakčiev, 2021), research on Ukrainian biaspectuality is infrequent, due to the preoccupation of researchers with Soviet and/or Slavic linguistic models that

¹ Adverbials also take part, but this issue is skipped for lack of space; on situation-participant NPs see Kabakčiev (2023, p. 54–55).

² Quantificational in broad terms, encoding (directly) or explicating (indirectly) boundedness/non-boundedness.

either bypass CA, or their followers are ignorant of it, despite its discovery five decades ago (Verkuy1, 1972). Two contrastive Ukrainian-English grammars (Pavliuk, 2010; Gladush & Pavliuk, 2019) not only fail to mention the existence of biaspectuality but uphold obsolete theses: “the English language has no perfective/imperfective aspects”; it has two aspects, “common and continuous”; “there is no direct correspondence between English and Ukrainian aspects” (Gladush & Pavliuk 2019, p. 56). In another Ukrainian grammar, written by foreigners, Pugh & Press (1999, p. 203) sidestep biaspectuality, possibly unaware of its existence, and launch a wrong conjecture: “practically every verb in Ukrainian exists as a member of an aspectual pair”. Two analyses of Aktionsarten and of Ukrainian aspectual pairs (Sokolova 2016; 2020), otherwise detailed, also, strangely, sidestep biaspectuality. The considerable presence of biaspectual verbs in Ukrainian is beyond doubt (Ginzburg 2009). They are certainly in the hundreds, and in every other Slavic language there are at least as many or more. Pchelintseva (2022, p. 173), studying Ukrainian nouns with situational meanings, found 320 derived from biaspectual verbs (*akumuliuвати* ‘accumulate’, *evropeizuvati* ‘Europeanize’, etc.) – which indicates that the total number of biaspectuals is higher, approaching the numbers found in other Slavic languages.

Understanding Biaspectuality

Aims of the Study

The fact that in Slavic and other VA languages the aspect of a sentence is encoded in the verb tends to portray it as if something unproblematic, easy to recognize and conceptualize. This might sound even more plausible if biaspectuality, an anomalous feature (as it were) did not exist. Well-known since the very beginning of Slavic studies, biaspectuality has been widely studied, but usually with little success. It consists in having a verb that refuses to exhibit aspect – both in isolation or in a sentence, unless the context somehow reveals it. Biaspectuality is not a Slavic phenomenon. It also exists in Greek (Dimitrova & Kabakčiev 2021), a VA language like the Slavic ones but genealogically different within the Indo-European family. Hence, biaspectuality must be regarded neither as a Slavic phenomenon, nor as Greek, nor as language-specific. It is *universal* and, therefore, its description should be carried out in a cross-language perspective, based on man’s cognitive apparatus.

We view biaspectuality as equally well-represented in Greek and the Slavic languages, notwithstanding its exact prevalence, whereby the aspectual ambivalence of verbs as lexical entries echoes the aspectual ambivalence of verbs in English and the other modern Germanic languages. Note, however, that Greek biaspectuality appears less prevalent than Slavic biaspectuality, for partly unclear reasons.

The article-aspect interplay, which underlies the mechanism of CA, can most precisely be observed in sentences in CA languages with three situation-participant NPs, where the bounded/non-bounded NP interplay triggers aspectual differences.

Consider the following English sentences, constructed, with three situation-participant NPs and the verb form *convoyed*:³

- (1) a. Two mountaineers convoyed the wild horse to drink from the nearby river
- b. Mountaineers_{LEAK} convoyed the wild horse to drink from the nearby river
- c. Two mountaineers convoyed wild horses_{LEAK} to drink from the nearby river
- d. Two mountaineers convoyed the wild horse to drink from nearby rivers_{LEAK}

These are *four uses* of the aspectually ambivalent form *convoyed*.⁴ The first, with three quantified NPs, is perfective, belonging to Verkuyl’s perfective schema. The other three, each with a single de-quantified NP, belong to Verkuyl’s imperfective schema and effectuate imperfectivity, due to the so-called leak(s). For detail on Verkuyl’s leaks and aspect schemata, see Kabakčiev (2023, p. 54–55). After Verkuyl’s discovery and the development of a full-fledged CA theory, today there is no doubt that sentences like (1a) prototypically explicate perfectivity, while sentences like (1b-d) explicate imperfectivity. But why exactly is (1a) perfective? And why are the rest imperfective?

Sentence (1a) is perfective because it contains only “plus-values” – bounded/quantified NPs and a telic verb, matching Verkuyl’s perfective schema. Verkuyl’s imperfective schema obligatorily features a leak/leaks: at least one de-quantified situation-participant NP or an atelic verb. The other three sentences are imperfective because each contains a leak, a non-quantified/non-bounded NP. In (1b) the leak is in *mountaineers*, in (1c) it is in *wild horses*. In (1d) it is in *nearby rivers* – which can be read as an adverbial or an indirect object. Thus, clearly, the sentences of pattern (1) with the same verb and identical or similar NPs offer a very efficient explanation of CA, though it still calls for a clarification of the role of articles. Translated into Ukrainian, the correspondences of (1) would have to contain a perfective verb in the first sentence and an imperfective one in the other three:

- (2) a. Dvoie horian vidvely_{PFV} dykoho konia pyty vodu z blyzkoi richky (=1a)
- b. Horiany vodyly_{IMPFV} dykoho konia pyty vodu z blyzkoi richky (=1b)
- c. Dvoie horian vodyly_{IMPFV} dykykh konei pyty vodu z blyzkoyi richky (=1c)
- d. Dvoie horian vodyly_{IMPFV} dykoho konia pyty vodu z blyzkykh richok (=1d)

Ukrainian biaspectual verbs are usually of Romance and Germanic origin, rarely domestic (Ginzburg 2009). To avoid aspectual ambiguity, they are often “naturalized” by adding a relevant prefix to the imperfective/biaspectual variant, but this tendency was previously not popular in prescriptivist grammars. Presently both forms (prefixed and prefixless) are used. If the biaspectual verb *konvoiuvaty* ‘convoy’ is to be used here, the Ukrainian native speaker would tend to perfectivize it by

³ As argued in Dimitrova & Kabakčiev (2021, p. 193), such sentences with three situation-participant NPs are “rare, difficult to encounter or construct, hence valuable”.

⁴ While *convoyed* is an aspectually ambivalent form, the progressive *was convoying* is not, it is imperfective.

adding the prefix *vid-* (*vidkonvoiuvaty*). However, following the aims of this study, we need to use the truly biaspectual verb *konvoiuvaty* to check if there will be a difference vis-à-vis the aspectually ambivalent *convoy* in English:

- (3) a. Dvoie horian konvoiuvaly_{BIASP} dykoho konia pyty vodu z blyzkoi richky (~1a)
 b. Horyany konvoiuvaly_{BIASP} dykoho konia pyty vodu z blyzkoi richky (~1b)
 c. Dvoie horian konvoiuvaly_{BIASP} dykykh konei pyty vodu z blyzkoyi richky (~1c)
 d. Dvoie horian konvoiuvaly_{BIASP} dykoho konia pyty vodu z blyzkykh richok (~1d)

Recall that, despite containing an aspectually ambivalent verb, the English sentences in (1) have very clear aspect meanings, arising as a result of the NP-V interplay. The Ukrainian sentences (3), which appear to be translation equivalents of (1), even literal, also contain three situation-participant NPs and an aspectually ambivalent verb. Hence, they ought to explicate aspect. Do they? No! The first sentence is ambiguous vis-à-vis aspect: it can be perfective or imperfective. Similarly with the other three, again ambivalent: perfective or imperfective. Where does the difference come from?

It arises due to something absent in the Ukrainian sentences. Although structurally they appear identical to the English ones and the verb is aspectually ambivalent as in English, the difference, which regularly escapes the attention of researchers, is: *articles*. In the seemingly literal Ukrainian translations above the articles simply disappear, but most linguists remain unperturbed – taking articles for granted or as if something negligible.⁵ According to a study on Slavic data (Kabakčiev 2021, p. 21),

the lesser the number of situation-participant NPs in a simple sentence with a biaspectual verb (one at best, or two), the higher the opportunities for disambiguating the aspectual interpretation of a biaspectual verb. As for sentences with two or three situation-participant NP and a biaspectual verb, the precise manner in which aspect is systematically disambiguated would obviously have to be a serious matter for future research.

Or, similarly phrased, “the higher the number of bare NP situation participants in a sentence, the higher the possibilities for ambiguity of the situational meaning of the relevant sentence” (Kabakčiev 2021, p. 15). What is the reason for this? It is the impossibility in Ukrainian and in other Slavic languages without articles to assign a value – (non-)quantified/(non-)bounded, to the relevant NP in the absence of articles (*a/the*, zero). This generalization on Slavic data leads to a hypothesis that it ought to be valid for similar languages with VA and no articles. But a hypothesis like this must be checked on concrete language data, and the major aim of this study is to determine – roughly – the extent to which Ukrainian sentences with a biaspectual verb and certain numbers of situation-participant NPs are capable of explicating aspect.

⁵ A key question, remaining for future studies, concerns the definiteness-indefiniteness values: are they *not* transferred from languages with articles into languages without articles? And if they are, exactly how?

Method

Underlying Philosophy and the Psycholinguistic Aspect of Aspect

As in the previous *East European Journal of Psycholinguistics* publication (Kabakčiev 2023), the approach to aspect in this paper is not the traditional grammatical one, inductive, exploring formal language devices (e.g., Slavic verbal morphology), but is deductive, formulating universal features and searching for their realization across languages (Dimitrova 2021). Although Verkuyl's discovery of CA in 1971 has hardly ever been regarded as obtained by a deductive approach, actually it was. Verkuyl launched his enterprise by conceptualizing the Slavic perfective-imperfective contrast as a universal feature and started searching for entities in the Germanic languages effectuating these concepts.

With regard to the conceptualization of NP referents as temporal entities, the approach here is psycholinguistic, exploring man's cognitive capacity through universal and cross-language elements. Psycholinguistics, launched as a scientific trend by Osgood & Sebeok (1954), views language not as a static set of formal entities (phonological, grammatical – morphological, periphrastic, etc.), as is done in traditional linguistics and grammar, but as an integral facet of cognition based on human perception, memory and categorization, from which, in Langacker's (2008, p. 8) words, it cannot be segregated. Stoyanova (2021, p. 21), in a similar vein, argues that language capacity should not be viewed as an abstract system of symbols but as a psychic/mental construct related to memory and thinking. Furthermore, speech production itself, as described in Stoyanova (2021, p. 112-120), is a mental procedure, i.e., processes outside and prior to the involvement of language structure, comprising purely cognitive elements. In other words, language production (speech, parole), and hence the language structure resulting from it as a global product of the collective human brain, cannot be divorced from thinking and explained independently from it.

In this case aspect, viewed as one of the innumerable elements of language structure, is a result of the workings of the human brain, and this paper demonstrates that aspect cannot be understood and explained simply as a notion of formal (morphological etc.) language structure. With its deductive, universal approach to language in general and not to separate languages, this work cannot follow mainstream grammatical descriptions also for a particular reason. A major tenet in it is that situation-participant NP referents *must not* be regarded as physical entities even when they refer to physical entities in objective reality. They are conceptualized as temporal ones interacting with each other and the verb referent (mainly). The idea that the referents of NPs otherwise standing for living things and other material/spatial objects – people, animals and other similar things in objective reality, are “physical entities”, could even be called illogical and absurd. A woman in a mirror is *not* “a material object”. It is *an image of a woman*, a non-spatial entity. Analogously, something called “woman” in a natural language *is not a physical*

object. It is an image/token of a woman encoded within the language structure through specific symbols – and when associated with a verb, it appropriates kinetic features.

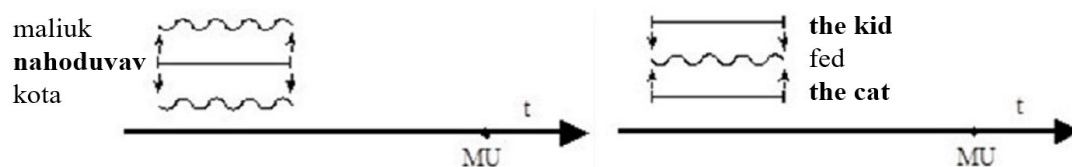
The idea that NPs referring in objective reality to living things and other material objects must be interpreted as temporal instantiations of such objects was introduced a long time ago (Kabakčiev 1984, p. 644–645) and contains the following assumption. NPs like *the kid* and *the cat* in sentences such as (4a) below are *not* physical entities, as traditional grammar would have us believe. They are temporal ones, like Carlson’s (1980) “slices/stages of individuals”. Clearly, standard grammar cannot maintain an assumption of physical entities as temporal instantiations (slices/stages) of individuals/objects, because its tradition is to treat the referents of such NPs as atemporal things: physical/material. The treatment of such NPs as temporal, kinetic entities residing in speakers’/hearers’ minds and interacting there can only be done within a different framework: not in the traditional linguistic but in the psycholinguistic one. This specific approach requires, furthermore, that all NPs corresponding to *the kid* and *the cat* in sentences like English (4a) below, with referents that are temporally bounded, be recognized as mental concepts *in any language*, not as symbols in a self-contained grammatical system of a particular language.

Investigated here is the Ukrainian language. Therefore, let us compare (4a) – in English as a metalanguage, and Ukrainian – in (4b) and (4c):

- (4) a. The kid fed the cat
 b. Maliuk nahoduvavPFVPRET kota (=4a)
 Kid fed [completely, once] cat
 ‘The kid fed the cat’
 c. Maliuk hoduvavIMPFVPRET kota
 Kid fed cat
 ‘The kid fed habitually the cat/was feeding the cat’⁶

Fig. 1 demonstrates that CA is a mirror image of VA. And, vice versa, VA is a mirror image of CA:

Figure 1
Compositional Aspect and Verbal Aspect Relations



⁶ The imperfective preterit *hoduvav* ‘fed’ in (4c) has either a habitual or a progressive reading but in both cases the referent of *hoduvav* triggers non-bounded instantiations of *maliuk* and *kota* – recurrent images of a kid and a cat in the habitual reading; non-recurrent images, again non-bounded, in the progressive reading. For detail on the latter, see (Kabakčiev 2000, Chapter 8).

Clearly, in languages like Ukrainian (left diagram sector) perfectivity is effectuated by the verb. In CA languages (right sector), conversely, it is realized by a complex NP-V interplay. But in both cases there is mapping/transfer of boundedness: from the verb to the NPs in Ukrainian, and from the NPs onto the verb in English. The left part of the diagram is thus valid for all the Slavic languages and for all other languages featuring perfective verbs. Note that the four NPs *the kid*, *the cat*, *maliuk* ‘kid’ and *kota* ‘cat’ and the two verbs, *fed* and *nahoduvav* ‘fed’ have referents that cannot be adequately explained in traditional descriptive terms. In the present theoretical model, the referents of *the kid* and *the cat* in English map their temporal feature boundedness onto the V-referent, forcing it into perfectivity: temporal boundedness plus reached telos. In Ukrainian, conversely, the temporal boundedness of the V-referent, surfacing as perfectivity and consisting in temporal boundedness plus reached telos in (4b), is mapped onto the referents of *maliuk* and *kota*, whereby these NP referents acquire temporal features radically different from the features of *maliuk* and *kota* in sentences like (4c) – see also the discussion below. Thus the concept of aspect in the present framework is not a static structural language phenomenon but a result of a complex interplay in speakers’/hearers’ minds between the boundedness and the telos component in the lexical meaning of the verb and features of NP referents such as temporal boundedness/non-boundedness. Lexical meaning here is a standard linguistic feature. But the temporal boundedness of situation participant NPs is not, it is a concept immensely distanced from standard grammatical frameworks and related to the mechanisms of processing language entities in the human mind.

The description of certain grammatical features cannot be successful without taking into account specific aspects of language structure and language use that pertain to processes realized in the human brain. If these processes are not properly accounted for in linguistic studies, many systematic cross-language and universal grammatical and semantico-syntactic regularities remain unexplained. We find that this happens in studies investigating native and/or foreign language acquisition by children and adults, etc. of aspectual, aspecto-temporal, tense and similar features. Such studies are often carried out without an adequate understanding of what aspect is. A typical mistake is that aspect is treated as a phenomenon belonging solely to the verb, after Jakobson’s (1957) wrong conception of aspect as something unrelated to situation participants. There are many studies investigating acquisition and comprehension of language (native, second, foreign, etc.) by infants, children, adults, etc., but there are few or no studies investigating the role of articles for the effectuation of aspect in CA languages – or in VA languages with verbs unmarked for aspect. As a consequence, the opposite impact, a huge one, of the aspectual value of the verb exerted on the temporal values of situation participants remains a *terra incognita*, although it is a key element in any information communicated through language.

To give a simple example, while *maliuk* and *kota* in (4b) above are *one-off, bounded kinetic instantiations* of a kid and a cat, in the habitual reading of (4c) the referents of *maliuk* and *kota* are *recurrent, non-bounded kinetic images* of a kid and a

cat. This observation could also be made within the confines of mainstream grammar. Yet, such a revelation almost never arises.⁷ The first researcher to report a difference between NP referents associated with a perfective verb and referents associated with an imperfective one was Vounchev (2007, p. 86–87), on Greek and Bulgarian data. By doing so, the author corroborated the conceptualization of NP referents as temporal entities – with NPs otherwise standing for physical objects in the minds of language speakers. The conceptualization of NPs as temporal entities was initially launched in Kabakčiev (1984) on Bulgarian and English data. Later it was sophisticated and shown in detail in Kabakčiev (2000).

The reasoning outlined above ultimately led to the understanding of VA as a mirror image of CA, and vice versa (Kabakčiev 2000, Ch. 7). The deductive approach employed there, as well as here, proved capable of not only pinpointing structural entities effectuating aspect across languages of different types but also of predicting what kind of grammatical and/or semantico-syntactic and similar entities would be present in any given language in the absence of other entities. It also led to the formulation of the “inverse relationship between markers of boundedness in verbs and nouns”:

When a certain language lacks markers of boundedness in the verbs, they are present in nouns; and vice versa, when a language lacks markers of boundedness in nouns, they are present in verbs (Kabakčiev 2000, p. 156).

This inverse relationship, whose finding was made possible only after, and thanks to, Verkuyl’s (1972) epochal discovery of CA, was first subscribed to by Abraham & Leiss’ (2012, p. 326), who wrote: “the first researcher to note that languages develop either a category of aspect or an article system was the Bulgarian linguist Kabakčiev (1984; 2000)”. A year later, endorsing the regularity, Bulatović (2013, p. 65) described “the cornerstones of what is known today as compositional aspect” as found in the works of Vendler, Verkuyl and Kabakčiev.

But alongside this cross-language formal categorization of aspect devices, more reasoning is needed on human cognitive capacity, regarding the way “material entities” like *kid* or *cat* are conceptualized as temporal. The explanation was provided using a so-called TV representation (Kabakčiev, 2000, p. 99–100) that can be summarized thus: for a speaker to produce a sentence like English (4a) or Ukrainian (4b) and for the hearer to understand them correctly, the speaker must have perceived or imagined, etc. a kid and a cat suddenly appear before the speaker’s eyes. This is where the “existence” of the two entities starts. And when/after the cat is fed, the kid and the cat disappear from the eyes of the beholder. Hence, within the situation in (4a) on a screen, they constitute temporal entities, as well as in the speaker’s mind: appearing before the feeding and disappearing after it. Are *kid* and *cat* “material things” then? Are they not temporal entities? Moving in time and having definite starting- and end-points when bounded? The answer is: yes. They *are* temporal

⁷ To the best of the authors’ knowledge.

entities – kinetic, moving with time. As for the effectuation of perfectivity-imperfectivity, see Kabakčiev (2000) for further detail. But, in any case, it is clear now that the human brain – the collective one governing the development of language, uses the articles *the* and *a* to mark situation-participant NPs as bounded, and the abstract entity called zero article to mark them as non-bounded (cf. Bulatović 2022, p. 503). The relevant value – boundedness or non-boundedness, is then transferred onto some other component(s) in the sentence.

Procedure

Ukrainian Sentences with a Biaspectual Verb and a Smaller Number (Two/One) of Situation-Participant NPs

The analysis here, and previously elsewhere, of sentences in Slavic languages with biaspectual verbs and three situation-participant NPs shows that such sentences generally fail to explicate aspect. Only some of them can, partially. Therefore, let us now have English sentences with aspectually ambivalent verb forms that contain *not* three situation-participant NPs but *only two*. In (5), the previous order is reversed: the first two sentences are imperfective, the third perfective:

- (5) a. EU states are to confiscate assets of the aggressor
b. Ten EU states are to confiscate assets of the aggressor
c. Ten EU states are to confiscate these assets of the aggressor⁸

Sentence (5a) belongs to Verkuyl's imperfective schema, with two leaks: in the subject *EU states* and in the syntactic object *assets*. The non-boundedness of *EU states* (also called de-quantification vis-à-vis NPs like *ten EU states*, *these EU states*, etc.) and of *assets* is mapped onto *confiscate*, triggering in it non-boundedness – more particularly iterative/non-bounded repetition, hence imperfectivity.

Now consider their Ukrainian counterparts with the biaspectual verb *konfiskuvaty*:

- (6) a. Derzhavy EU maiut konfiskuvaty aktyvy ahresora (≠5a)
b. Desiat derzhav EU maiut konfiskuvaty aktyvy ahresora (≠5b)
c. Desiat derzhav EU maiut konfiskuvaty tsi aktyvy ahresora (=5c)

Note that the imperfectivity of English (5a) cannot be transcoded to the otherwise seemingly equivalent Ukrainian (6a). Why? Because the NP *derzhavy EU* 'EU states' cannot be assigned non-boundedness. It can mean *three totally different things*. First, *derzhavy EU* can be regarded as a zero-article NP, hence non-bounded, just like *EU states* in English. Second, *derzhavy EU* can be read as if containing a covert quantifier (English *some*), hence it cannot be non-bounded. Third, *derzhavy*

⁸ Note that *the aggressor* in the phrase *assets of the aggressor* is not a situation-participant NP. Situation-participant NPs in (5) are *EU states/ten EU states* and *assets/these assets*.

EU could be interpreted as if with a definite article – and again cannot qualify as non-bounded. Phrased otherwise, *derzhavy EU* in (6a) has *three-fold ambiguity*: definite and bounded (equal to English *the EU states*), indefinite and bounded (equal to *some EU states*), and non-bounded (equal to *EU states*). All this means that:

- Ukrainian (6a) is *not* equal to English (5a). It fails to explicate aspect (imperfective).
- Ukrainian (6b) is *not* equal to English (5b). It fails to explicate aspect (imperfective).
- However, Ukrainian (6c) is roughly equivalent to English (5c). It broadly renders the perfectivity of Ukrainian (6b) through the boundedness of the two NPs.

Conclusions of this kind, valid beyond any doubt, destroy some major postulates of traditional aspectology – which used to advocate for two centuries that Slavic aspect is a very special, unique phenomenon absent in all other languages, hence not even worthy of research. Recall Issatschenko’s (1974, p. 141) well-known remark that Slavic aspects are “awe-inspiring and mystical categories” to be treated only by the initiated, the native speaker (but Issatschenko’s remark contains irony too). Our authors’ intuition points to Slavic linguistic writings, mainly Russian/Soviet, predominant in Slavic studies due to the large numbers of linguists, as the main factor behind the myth that Slavic aspect is a special phenomenon.⁹ Note that here, slashing the hype, sentences in English, a language persistently labeled “aspectless”, clearly exhibit aspect, while the corresponding ones in Ukrainian, an “aspect language”, fail to effectuate aspect.¹⁰

The Ukrainian sentences that can render the aspect in the English sentences (5) will be (7), through the forms *budut vidbyraty*, imperfective (7a,b), and the perfective *vidberut*, (7c):

- (7) a. Derzhavy EU *budut vidbyraty aktyvy ahresora*
 b. Derzhavy EU *budut vidbyraty aktyvy ahresora*
 c. Desiat derzhav EU *vidberut tsi aktyvy ahresora*

Now let us have another group of English sentences, (8), with aspectually ambivalent verbs and again two situation-participant NPs. This time the first sentence (8a) explicates perfectivity, the other two imperfectivity (8b-c):

- (8) a. Two experts reconstructed the face of Ramses II
 b. Experts reconstructed the face of Ramses II
 c. Experts reconstructed faces of pharaohs

Let us translate them into Ukrainian with a biaspectual verb to check if aspect will be properly explicated:

⁹ Similar to the idea of “a Russian soul” – implying that other nations have no soul.

¹⁰ But in our opinion scientists should not rebuke obsolete theses, and could even be grateful for certain misconceptions – that sometimes open modern eyes more effectively.

- (9) a. Dvoie ekspertiv rekonstruiuvaly oblychchia Ramzesa II (=8a)
b. Eksperty rekonstruiuvaly oblychchia Ramzesa II (≠8b)
c. Eksperty rekonstruiuvaly oblychchia faraoniv (≠8c)

Ukrainian (9a) broadly transfers the perfectivity of English (8a) – thanks to the boundedness of the NPs *dvoie ekspertiv* ‘two experts’ and *Ramzesa II*, the latter effecting boundedness by its proper-name status.¹¹ However, (9b-c) fail to transfer the imperfectivity of English (8b-c) because of the unclear quantificational status of the relevant NPs. *Eksperty* and *faraoniv* are three-fold ambiguous. They can mean ‘the experts’, ‘some experts’ or ‘experts’, and ‘the pharaohs’, ‘some pharaohs’ and ‘pharaohs’, respectively. In other words, both *eksperty* and *faraoniv* can be interpreted as *either* definite *or* indefinite, and *either* bounded *or* non-bounded.

As previously established (Kabakčiev 2021), when decreasing the number of situation-participant NPs from two to one, as in English (10) below, Slavic sentences with biaspectual verbs may explicate perfectivity, as in (11a), or imperfectivity, as in (11b):

- (10) a. How to organize a rock concert?
b. How to organize rock concerts?
(11) a. Yak orhanizuvaty rok-kontsert?
b. Yak orhanizuvaty rok-kontserty?

But this does not hold for (12a,b):

- (12) a. How to organize the New Years’ party?
b. Yak orhanizuvaty novorichnu vechirku?

When aspect is not explicated in CA terms, as in (12), pragmatic circumstances surrounding the situation (“knowledge of the world”) take over aspect effectuation. On pragmatic factors in aspect effectuation, see Kabakčiev (2000, Chapter 14). Unlike in (10) and (11), the aspect value in (12) is ambiguous in both English and Ukrainian. The hearer cannot understand what the speaker has in mind: a one-off situation, a single New Years’ party, or New Years’ parties in general.

Examples with two situation-participant NPs or only one and a biaspectual verb show that in VA languages additional factors take part in aspect effectuation: neither grammatical, nor semantic but pragmatic, involving “knowledge of the world”. In any case, serious research is needed for making adequate generalizations about how definiteness, indefiniteness, boundedness and non-boundedness are signaled in VA languages with no articles like Ukrainian.

Results and Discussion

At the beginning of this project, aimed at investigating Ukrainian biaspectuality, we, the authors, knew the phenomenon exists but did not know its prevalence. We

¹¹ A proper name, e.g. *John*, effectuates definiteness and boundedness – it roughly means “*the* man called John”.

checked the available literature. It showed that biaspectuality is well-represented, but it was not clear to what degree. Our own and others' publications suggest that biaspectuality is represented differently in the different VA languages. It is frequent in Bulgarian, has a lower prevalence in the other Slavic languages and is rare in Greek (Dimitrova & Kabakčiev, 2021), where, of course, it also exists (further research is necessary). Its relatively moderate prevalence in Ukrainian is similar to the other Slavic languages and its higher prevalence in Bulgarian is explained by the presence of a definite article, exercising NP quantification. This means that aspectual ambivalence in Ukrainian verbs of foreign origin (entering the language in areas such as computer science), must be counterbalanced by prefixed perfective verbs to counter the biaspectuality of the initial borrowing (*konvoiuvaty*>*vidkonvoiuvaty* 'convoy'). In Bulgarian no prefixation is used to counter biaspectuality in this case, but is observed in other similar borrowings. The analysis here showed not only that Ukrainian behaves similarly to other Slavic languages, with more intensive prefixation to counter biaspectuality, but also that aspect in Ukrainian is effectuated in compositional terms just like in other Slavic languages. This phenomenon is peripheral and mainly occurs in sentences with biaspectual verbs and situation-participant NPs fewer than three.

There are some specific cases too. Analyzing aspectual verb paradigms, Sokolova (2016, p. 80) describes the Ukrainian pair *tantsiuвати*>*vitantsiovuvati* as imperfective>perfective, i.e., in traditional grammatical terms, not compositional. We find that, just like in Bulgarian, see (13a), the Ukrainian unprefixed verb *tantsiuвати* can also be treated as biaspectual. In Ukrainian (13b), a sentence from the Internet, the seemingly imperfective (actually biaspectual) *tantsiuвали* is compositionally coerced into perfectivity by *odin tanets* 'a dance' and *mi* 'we' simultaneously. The temporal boundedness of the two NPs is mapped onto the verb referent – in both Bulgarian and Ukrainian – as in the English section of Fig. 1 above:

- (13) a. Vchera tantsuvah edin tants s uchitelkata si
 'Yesterday I danced a dance with my female teacher'
 b. U Chernivtsiakh same prokhodyv parad narechenykh i my razom z yoho uchasnytsiamy
 tantsiuvaly ody tanets
 'In Chernivtsi there was a bridal parade and we danced a dance together with its female participants'

The analyses here and in previous publications exploring the interplay between article and biaspectuality (first shown in Kabakčiev, 1984), reconfirm the special place of Bulgarian in the Slavic world with its definite article. Along these lines, confirmed in the paper is also the preliminary expectation that Ukrainian ought to behave similarly to the other Slavic languages without articles, whereby the lack of a non-boundedness device (bare NP/zero article) hampers the systematic marking of non-boundedness. This, in turn, firstly, reasserts the high significance of the problem of English articles (*a*, *the*, zero) having no exact correspondence(s) in Ukrainian, in need of serious research. Secondly, it reinforces the thesis that the *raison d'être* of articles across languages is to realize aspect compositionally, while their functions as

markers of definiteness-indefiniteness, specificity, non-specificity, etc. are residual. As recently argued by Bulatović (2022, p. 503), “it is the [\pm boundedness] role of articles that is primary, and their [\pm definiteness] role is secondary”. Here it is worth recalling Leiss’ (2000) remarkable discovery of the interdependence in three Proto-Germanic languages between the demise of perfectivity and the rise of a definite article – which advanced further in modern Germanic and was followed by the rise of a systematic use of indefinite articles, whereby the two articles (English *the* and *a*) started to serve the effectuation of perfectivity.

Finally, the analysis also confirmed the expectation, stemming from similar studies on Slavic languages, for Ukrainian aspect to be realized in a particular fashion in sentences with biaspectual verbs and particular numbers of situation-participant NPs: three, two, one. Aspect, the perfective-imperfective contrast, can rarely be effectuated in sentences with biaspectual verbs and three situation-participant NPs. It can somewhat more frequently be realized in sentences with two situation-participant NPs, and much more systematically in sentences with one situation-participant NP – through the use of nominal determination markers other than articles, or in pragmatic terms, through “knowledge of the world”.

Conclusion

The analysis corroborates previous observations that Ukrainian biaspectuality tends to be somewhat restricted – like in other similar Slavic languages with no articles, due to the frequent prefixation of biaspectuals (*konvoiuvaty*>*vidkonvoiuvaty*; *tantsiuvati*>*vitantsiovuvati*). Still, biaspectuality remains a living phenomenon in Ukrainian, appropriate for the investigation of important issues such as the realization in languages without articles of (in)definiteness, (non)specificity, (non)genericity, etc. The analysis of Ukrainian biaspectuality also confirmed the idea that aspect, conceptualized as a perfective-imperfective contrast in the effectuation of both VA and CA, is a *universal* phenomenon that can in all probability be found not simply across languages but in *any natural language*, whatever its geography or genealogy, yet, of course, in different structural disguises. This is because aspect is mainly a result of the cognitive and linguistic capacity of man and is not so much – or is not at all – influenced by factors such as language contact or internal mechanisms such as language economy (on the latter, see Symeonidis, 2020).

Also confirmed is the conjecture that VA languages can peripherally feature CA and this is demonstrated here through the use of Ukrainian biaspectual verbs. Due to the absence of an article system, CA in Ukrainian is best pronounced in sentences with one situation-participant NP, less so in sentences with two situation-participant NPs, where it is possible to a certain degree. In sentences with three situation-participant NPs it is difficult to observe and restricted to cases in which *all* the situation-participant NPs are quantified within the specific Ukrainian nominal-determination system without articles – to trigger perfectivity.

Finally, this study on Ukrainian biaspectuality definitively supports the understanding of CA as:

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 (Kabakčiev 2019, p. 212).

Unfortunately, CA has for a long time been – and to a large extent still is – a *terra incognita* in Slavic aspectological research, especially in Slavic languages with no articles. We hope that this paper, exploring Ukrainian data, will be regarded in the future as a decent initial attempt to introduce the theory of CA to Ukrainian studies.

Division of Labor

Svitlana Bakardzhieva-Morikang is responsible for the Ukrainian data. Krasimir Kabakčiev is responsible for the theoretical model.

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