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## **Lexical factors in non-finite complementation of *continue***

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### **Abstract**

The study examines the usage of two non-finite complements of the verb *continue*: the -ing form and the *to*-infinitive, arguing for the importance of low level generalizations in accounting for the complement choice. The semantic import of complement constructions may vary with specific lexeme classes of both the matrix verb and the complement verb, as well as be conditioned by more general features associated with the verbs' lexical aspect. The determinants of complement choice are characterized in terms of the aspectual construal of the complement event imposed by the two alternative constructions: conceptual proximity and distance associated respectively with the -ing form and the *to*-infinitive. The study relies on distinctive collexeme analysis: a statistical technique which compares the lexemes distinctive for the two constructions in order to describe the semantics of the construction by examining its most characteristic collocates.

### **Keywords**

non-finite complementation, aspectual verbs, construction grammar, lexical aspect, distinctive collexeme analysis

## Uwarunkowania leksykalne komplementacji angielskiego czasownika *continue*

### Abstrakt

Celem artykułu jest analiza dwóch alternatywnych wzorców komplementacji angielskiego czasownika *continue*: formy gerundialnej z końcówką *-ing* oraz bezokolicznika z *to*. Autorka argumentuje, że motywację wyboru przez mówiących jednej z dwóch konstrukcji może wyjaśnić jedynie analiza na niskim poziomie abstrakcji, ponieważ ich znaczenie różni się w subtelny sposób dla różnych typów zarówno czasownika nadrzędnego jak i podrzędnego, a dodatkowo jest uwarunkowane cechami natury bardziej ogólnej, związanymi z aspektem leksykalnym. Czynniki warunkujące wybór wzorca komplementacji są opisane w kategoriach konturu aspektualnego tworzonego przez dwie alternatywne konstrukcje: bliskości i dystansu pojęciowego powiązanego odpowiednio z formą z końcówką *-ing* oraz bezokolicznikiem z *to*. Badanie opiera się na analizie charakterystycznych koleksemów (ang. *distinctive collexeme analysis*): technice statystycznej porównującej leksemę dystrynktywne dla dwóch konstrukcji, w celu opisanie semantyki tych konstrukcji za pomocą ich najbardziej typowych kolokacji.

### Słowa kluczowe

komplementacja czasowników angielskich, czasowniki aspektualne, gramatyka konstrukcji, aspekt leksykalny, analiza koleksemów dystrynktywnych

### 1. Introduction

The aim of this study is to propose a usage-based model of the non-finite complementation of *continue*, building on the lexical preferences of the two constructions revealed by distinctive collexeme analysis: a statistical technique of collocation analysis established by corpus-driven cognitive semantics (Glynn 2014: 315). Cognitive grammar (Langacker 1991, 2008) and Construction Grammar (Goldberg 1995, 2006) are used as the framework for the analysis. The study argues for the importance of low-

level generalizations in the description of verbal complementation, demonstrating that complement constructions may have different semantic import with different lexeme classes.

Recent cognitive and functional approaches to complementation have generally ceased looking for single, unified semantic determinants of complement choice, emphasizing instead the multiplicity of essentially probabilistic factors involved, which may be lexical, semantic, discourse-pragmatic, even prosodic in nature (De Smet 2013: 31-41). This study focuses on the lexical and aspectual features involved in the choice between the two complements: the interaction between the semantics of the complement verbs and the aspectual construal of the event inherent in the complement construction with the matrix verb *continue*. Construction Grammar argues that grammatical constructions are inherently meaningful (Hilpert 2021: 10), and thus the analysis of complementation patterns should encompass the semantic content contributed by all their elements (Duffley & Fisher 2021: 72) in order to examine how the schematic meaning of the construction interacts with the more specific semantic content of the complement verb. This in turn necessitates analysis at a more specific level: rather than describing characteristics of the two complement constructions in general, the present study focuses on the regularities specific to a particular matrix verb (*continue* as an aspectual verb with a specific semantic content) as well as particular semantic classes of complement verbs. The two complement constructions are here approached as a cluster of more specific constructional schemas.

The paper is structured as follows. The current section introduces the aims and scope of the study. Section 2 gives a brief overview of the differences between the two non-finite complements of *continue*: the *to*-infinitive and the *-ing*. Section 3 is devoted to a distinctive collexeme analysis of the two constructions, discussing first the top 20 complement verbs distinctive for each of them and then proposing a more detailed description of all the statistically significant collexemes divided into semantic classes. Section 4 discusses the implications of the results

and offers some conclusions pertaining both to the examined constructions and to the adopted research methodology.

## **2. Non-finite complements of *continue***

Non-finite complements of aspectual verbs, such as *begin*, *continue* or *cease*, pose problems for semantically motivated accounts of verbal complementation: often there is no immediately apparent difference in meaning between the alternative constructions, and the determinants of complement choice that prove explanatory for other types of verbs are of limited use or fail altogether. For instance, the three basic semantic oppositions proposed by Hamawand (2004: 452-455), temporal reference (subsequent – non-subsequent), aspect (bounded – unbounded) and character (more nominal – more verbal), cannot account for the difference between the non-finite complements of *continue*. Both patterns code the same temporal reference: the matrix event and the complement event are co-extensive. Attempts to explain the difference in terms of interruption and subsequent resuming of the activity find no support in data (Egan 2008: 192). The nominal-verbal distinction is in fact misleading when applied to the complements of *continue*, as it is the -ing complement, typically described as more nominal, that denotes actions which are more agentive and specific rather than generic (Egan 2008: 185-186). Out of the three semantic determinants of complement selection, the only one that may be applicable to *continue* constructions is aspect.

The bounded-unbounded distinction related to aspect can be described in terms of specific features of construal: perspective and viewing frame, i.e. the part of the event that is in focus. The -ing form has an imperfectivizing effect and takes internal perspective on the verbal process, so that its boundaries are excluded from the immediate perceptual scope. Since the conceptualizer 'zooms into' the event, it is viewed as a series of homogeneous states (Langacker 2008: 120-121). The *to*-infinitive signals boundedness, so the event is construed holistically, as a single unit (Hamawand 2004: 453). This distinction, however,

is blurred with *continue*, where the semantic content of the matrix verb itself imposes internal perspective on both non-finite constructions. Depending on the telicity of the complement verb, the event is consequently seen as either continuative (*continue reading this story*)<sup>1</sup> or iterative, i.e. denoting a series of repetitions (*continue reading novels*). The difference in perspective inherent in the aspectual distinction may in this case serve more general, discourse-pragmatic functions.

Duffley (2006: 107-115) contrasts the two complements of *continue* in terms of their syntactic function. He describes the *to*-infinitive complements as goal-circumstantial, emphasizing "the notion of movement towards the total realization of an event" (2006: 111). Rather than on the complement process itself, the construction focuses on its potential completeness and goal. By contrast, the *-ing* complement has the function of direct object, "that which is continued" (2006: 108), and it places the focus on the complement process.

The theoretical tools that this study will mostly rely on are Verspoor's (1999, 2000) analysis of non-finite complements in terms of conceptual proximity or distance and Egan's (2008) 'targeted alternative' approach to the meaning of the *to*-infinitive. Verspoor (2000: 202), following Givon (1993), argues that English complement constructions are motivated by iconic principles, in that the degree of syntactic integration of the main clause and the subordinate clause reflects the conceptual integration of the two events. Consequently, various constructions can be described in terms of conceptual proximity or distance. A close vantage point connected with the internal perspective of the *-ing* complement presents the event as experienced directly and therefore subjectively. Thus, the *-ing* form codes "a very subjectively construed atemporal imperfective process that does not include the initial and the final states" (Verspoor 1997: 449).

By contrast, the *to*-infinitive has a distancing function and portrays the complement event as experienced indirectly, where the distance may be either temporal or epistemic. Depending on

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<sup>1</sup> All examples from COCA corpus (Davies 2008-), emphasis added.

the type of matrix verb, it may introduce the notion of futurity (with manipulative verbs, e.g. *want to*, *promise to*) or a judgment going beyond the immediate experience (e.g. *find/believe somebody to*) (Verspoor 2000: 208). Because the *to*-infinitive inherits the path-goal sense of the preposition *to*, which implies both distance and direction (Egan 2008: 95), it is often seen as goal-oriented.

Egan's (2008) description of the meaning of the infinitive in terms of 'targeted alternative' is an extension of this approach. A *to*-infinitive construction denotes "a situation, viewed as a whole, profiled as the more/most likely of two or more alternatives in some specified domain" (2008: 99). For instance, with matrix verbs involving judgment (e.g. *consider/believe somebody to*) the situation is profiled as likely to be true, while with verbs of intention (e.g. *decide/plan to*) it is construed as likely to happen.

Egan's extensive corpus-based study of non-finite complements frequently emphasizes the importance of context and relies on contextual features to characterize the constructions: *continue*-ing typically combines with agentive subjects and describes specific events (single or repeated on one particular occasion), while *continue to*-infinitive favours non-agentive subjects and denotes generic situations, likely to occur more or less regularly on different occasions (Egan 2008: 185-187). Even though the analysis that follows focuses on token frequency of particular complement verbs rather than close analysis of their individual uses in context, features such as agentivity and specificity will prove to be important factors in the interpretation of the results.

### **3. Distinctive collexeme analysis**

#### **3.1. The method**

Distinctive collexeme analysis belongs to the family of quantitative corpus-linguistic methods jointly described as collocation analysis (Stefanowitsch and Gries 2003; Gries and Stefa-

nowitsch 2004). It is aimed at semantic description of grammatical constructions by characterizing the meaning of their collexemes: lexical items that are most strongly associated with them. In order to gauge the strength of this correlation, referred to as collocation strength, the analysis uses relative frequencies to identify lexical items which occur in a construction more often than expected (Hilpert 2014: 391-392). Distinctive collexeme analysis is specifically geared for contrasting two or more similar constructions. By comparing their collocational preferences, the method reveals subtle differences between superficially synonymous structures. The input data consist of the overall frequencies of both constructions in the corpus and the token frequencies in both constructions of each of the analysed collexemes. Thus, the distinctive collexeme analysis of the complements of *continue* requires the overall frequency of *continue to-infinitive* and *continue -ing* in the corpus, as well as the frequencies of particular complement verbs in both constructions. The results will show which of the complement verbs occur in one structure significantly more often than in the other.

The data used in the present analysis have been obtained from the COCA corpus (Davies 2008-), which contains over 500 million words and is continually updated. Due to the large size of the corpus, the sample was limited to complement verbs whose frequency of usage exceeds 0.1 % of at least one of the constructions (8 tokens for *continue -ing* and 62 tokens for *continue to-inf*). The analysis was performed with Coll.analysis 3.5 script (Gries 2014), kindly made available by the author. The script uses the Fisher exact test, producing as the final output not the resulting p-value, but its negative logarithm to the base of ten. This procedure greatly simplifies the interpretation: it avoids very low p-values, frequently expressed in powers of ten, instead providing more intuitively readable results, where a larger number corresponds to a stronger association between the lexical item and the construction.

The analysis proceeds as follows. First, the top 20 collexemes revealed as distinctive for each construction are compared with Kaleta's (2014) findings based on the BNC corpus. Then a more

detailed interpretation procedure is proposed, following Perek (2014: 115-141); namely, all statistically significant collexemes are divided into semantic classes and generalizations are made over each of such 'verb-class-specific' constructions.

### 3.2. Top 20 distinctive collexemes

Distinctive collexeme analysis of the two non-finite complements of *continue* has already been conducted by Kaleta (2014: 122-125) on the basis of the British National Corpus. The study revealed 18 significant collexemes distinctive for *continue to*-infinitive and 65 for *continue -ing*. The main complements of the infinitival construction are verbs of state (*be, have, exist*), verbs describing non-agentive processes of change and development (*rise, grow, increase*), cognition and perception verbs (*believe, stare*) and abstract, generic agentive processes (*press, support*). The *continue -ing* construction attracts verbs denoting specific, agentive actions (*work, walk, read*) and recurrent processes (*trade, collect, finance*).

The aim of the present analysis is to validate Kaleta's findings by investigating a larger corpus and hopefully to demonstrate the benefits of low level generalizations in the interpretation of the results.

The analysis of the COCA corpus data revealed 92 distinctive collexemes of *continue to*-infinitive and 87 of *continue -ing*. The top 20 complements of both constructions are listed below, together with their collocation strength. The lexemes that occur also in Kaleta's (2014: 122-125) top 20 are marked in bold.

**Table 1**

Top 20 significant collexemes of  
*continue to*-infinitive and *continue -ing*.

<b>Continue to-infinitive</b>	<b>Collocation strength</b>	<b>Continue -ing</b>	<b>Collocation strength</b>
<b>Be</b>	Infinite	<b>Walk</b>	95.5381
<b>Have</b>	27.4413	<b>Talk</b>	89.7903
<b>Grow</b>	22.7274	Cook	84.4527



<b>Increase</b>	13.0338	<b>Work</b>	58.325
<b>Exist</b>	12.7109	<b>Read</b>	55.343
Decline	11.8842	Bake	37.5642
Insist	11.3002	Beat	27.5865
Evolve	11.0527	Add	16.5274
<b>Maintain</b>	10.2658	Whisk	12.9695
<b>Believe</b>	8.3925	Eat	12.346
Struggle	8.3212	Roast	12.335
Improve	8.2822	<b>Live</b>	12.1366
<b>Dominate</b>	7.6177	Use	11.7114
<b>Hold</b>	7.299	Speak	10.7778
Keep	7.2074	<b>Fight</b>	10.3168
Mount	6.9105	Drive	10.0814
Rely	6.4111	Sing	9.9782
Thrive	6.2684	<b>Write</b>	9.9148
Plague	6.1757	Officiate	9.3309
Haunt	5.8106	<b>Fund</b>	9.1211

The collocation strength determined for a particular verb reflects the p-value resulting from the Fisher exact test. The lexemes whose collocation strength exceeds 1.3 are statistically significant at the p-level of 0.05, while a value above 3 indicates a highly significant attraction at the p-level of 0.001. As can be seen in the table above, all top 20 lexemes are well above this threshold. The collexemes of *continue* -ing are generally more distinctive, which may be caused by the lower overall frequency of the construction.

The results show that there is a considerable degree of correspondence between the distinctive collexemes in both corpora: 17 verbs occur within the top 20 on both lists, while 16 more lexemes appear within the top 20 in one ranking, but further down the list in the other. The correspondence is more pronounced in the case of the infinitival construction, where the top five COCA collexemes appear in BNC top 20, and the two most significant ones, *be* and *have*, match in both lists. Curiously, the verb *stare*, which in the BNC appeared among the top 20 collexemes of *continue to*-infinitive, turned out to be distin-

ctive for *continue* -ing in COCA, with a collocation strength of 2.5595, which ranks it approximately in the middle of the list.

Two of the semantic classes postulated by Kaleta (2014: 122-125) can also be observed in COCA data. State verbs (*be, have* and *exist*) remain the most distinctive for *continue to*-infinitive, closely followed by verbs of non-agentive change and development (*grow, increase, decline, evolve, improve, mount* and *thrive*). Additionally, a group of verbs can be distinguished whose common semantic trait is the notion of continued influence, either agentive or abstract (*maintain, dominate, hold, keep, rely, plague* and *haunt*). What the remaining 3 verbs (*insist, believe* and *struggle*) have in common is that they typically require human subjects and indicate effort and conviction, so they can be construed as force-dynamic. Generally, it can be concluded that the distinctive collexemes of *continue to*-infinitive are predominantly durative and atelic since they are either states or abstract activities.

The verbs distinctive for *continue* -ing indeed describe specific agentive events: motion (*walk* and *drive*), communication (*speak* and *talk*) and other durative processes, typically intransitive (*work, live, fight* and *officiate*). A characteristic group of collexemes refers to the processes of food preparation (*cook, bake, beat, add, whisk* and *roast*). Finally, there is a group of usually transitive verbs whose lexical aspect depends to a great extent on the type of the object (*read, eat, use, sing, write* and *fund*). With a singular, specific object they denote a single accomplishment – a durative, telic action (e.g. *continue writing the letter*) while with a plural object they gain iterative meaning and describe a series of accomplishments (*continue writing letters*). The common features of the collexemes of *continue* -ing seem to be dynamicity and durativity – they code either activities (dynamic, durative and atelic) or accomplishments (dynamic, durative and telic). The durativity of the *continue* constructions results directly from the semantics of the matrix verb, but the *to*-infinitive and the -ing complements can be contrasted in terms of their respectively atelic and dynamic collexemes. The problem is that these two features are not mutually exclusive: activities are at

the same time dynamic, durative and atelic, and thus constitute a potential area of overlap between the two constructions.

### **3.3. Verb-class-specific analysis**

As can be seen above, there are certain generalizations that can be made over the groups of verbs distinctive for each construction. Casting the net wider and analysing a larger group of collexemes will hopefully reveal more clearly visible patterns related to specific semantic classes. “Many constructions are distributionally biased towards one verb whose meaning is very similar (if not identical) to that of the construction” (Perek 2014: 89) and such regularities are the most clearly visible at the lower levels of generalization. As the following analysis will reveal, in most of the verb classes discussed below, there is one dominant verb, usually twice as distinctive for the construction as the next item in the ranking, while among the top 20 significant collexemes the differences in collocation strength are much less pronounced. Such dominant verbs have been marked in bold in the tables that follow, and they are assumed to reflect the meaning of the constructional sub-schema the most closely.

The division of the collexemes proposed below is based on the verbs' semantic domain, event structure (Croft 2012) and lexical aspect (Vendler 1957; Croft 2012). The semantic criterion is treated as primary where a specific domain can be distinguished. With the remaining verbs, generalizations are sought at a higher level, on the basis of features such as durativity, transitivity or aspect.

#### **3.3.1. Distinctive collexemes of *continue to-infinitive***

The first group of collexemes of the infinitival construction contains state verbs, which describe continued existence of a situation or continued possession of a particular quality.

**Table 2**Distinctive collexemes of *continue to*-infinitive: verbs of state

<b>Be</b>	<b>Infinitive</b>	Stand	3.6108
<b>Have</b>	<b>27.4413</b>	Stay	3.4202
Exist	12.7109	Represent	1.6876
Remain	5.5946	Occupy	1.3948
Show	4.7771		

The most distinctive of those collexemes is the verb *be*, whose strength of association with the construction is infinite. In the majority of its uses, the verb is followed by a subject predicative, but approximately 36 % of its tokens are examples of the passive, which in itself has a stativizing effect (Langacker 1991: 265). There are altogether 9 significant collexemes of this micro-construction (*continue to*-infinitive passive). They either coincide with the collexemes of the *continue to*-infinitive (*plague, haunt, dominate*) or resemble them semantically (*dog, debate, marginalize*), while the remaining verbs (*amaze, fascinate, frustrate*) form adjectival passives. At the same time, the construction strongly repels typical dynamic verbs (e.g. *make, do, find, give*), which proves that it inherits more features from *continue to*-infinitive than from the passive construction in general.

The verb *have* is a light verb, whose meaning greatly depends on its object. The most frequent combinations refer to experience, usually negative (*have problem/trouble/difficulty*) or attitude, usually positive (*have confidence/faith/hope*). The verb *show* is predominantly complemented either by that-clauses or abstract nouns (*show progress/growth/improvement*), to express a judgement or a conclusion. *Stand* denotes posture or attitude (*stand by/together/defiant*), while the tokens of *represent* divide almost equally between the stative meaning of 'constitute' (*represent an obstacle/a hazard*) and the dynamic of 'stand for in court'. The considerations above indicate that the classification of the verbs is necessarily an approximation, as few lexemes show entirely uniform usage. Often the interpretation is conditioned by features such as subject animacy or transitivity type.

The next group of collexemes contains verbs profiling change and development.

**Table 3**

Distinctive collexemes of *continue to*-infinitive:  
verbs of change and development

<b>Grow</b>	<b>22.7274</b>	Fall	3.8516
Increase	13.0338	Become	3.7991
Decline	11.8842	Expand	3.2047
Evolve	11.0527	Emerge	2.8808
Improve	8.2822	Worsen	2.4564
Mount	6.9105	Unfold	2.3857
Thrive	6.2684	Rage	2.3715
Rise	5.8026	Shrink	2.2299
Flourish	4.427	Appear	2.0896
Change	4.3839	Escalate	1.8717
Occur	4.2743	Happen	1.5829
Drop	4.1951	Lose	1.304

The verbs describe change in quantity (*increase, decline, rise, drop, expand, shrink*) or quality (*improve, worsen, change, become*), occurrence (*occur, emerge, appear, happen*) or continuation of a process (*thrive, flourish, rage, unfold*). They are typically non-agentive, combining with abstract or inanimate subjects. Most of them are evaluative, specifying whether the process in question is a positive or a negative one. All these features are exemplified by the most distinctive verb *grow*. In terms of their lexical aspect, the collexemes are durative and predominantly atelic; however, some of them can be construed as telic and consequently iterative (*new cases continue to occur*).

Another large group comprises verbs of extended causation or influence.

**Table 4**

Distinctive collexemes of *continue to*-infinitive:  
verbs of causation and influence

Maintain	10.2658	Shape	3.0088
Dominate	7.6177	Exert	2.6443
Rely	6.4111	Pose	2.363
Plague	6.1757	Generate	2.3059
Influence	5.8106	Draw	2.2348
Haunt	5.8106	Gain	2.034
Affect	5.1721	Define	2.0329
Support	4.6301	Benefit	1.9496
Attract	4.5063	Monitor	1.8693
Inspire	3.4269	Control	1.8669

They are mostly non-agentive, describing cause-effect relationships between abstract entities. Those that can occur with a human subject profile extended, relatively non-specific processes of causation and control (*maintain, support, monitor, control*). They are overwhelmingly durative and atelic.

As opposed to the previous three groups of verbs, which typically co-occur with inanimate, often abstract subjects, the following groups comprise verbs that normally require a human subject. 16 of them describe communication and interaction (see Table 5).

**Table 5**

Distinctive collexemes of *continue to*-infinitive:  
verbs of communication and interaction

<b>Insist</b>	<b>11.3002</b>	Claim	2.3715
Struggle	8.3212	Press	2.151
Face	5.1345	Allow	2.0891
Ignore	3.7397	Express	2.0696
Deny	3.27	Emphasize	2.0164
Resist	3.5055	Refuse	1.9533
Oppose	2.9283	Challenge	1.6133
Elude	2.6915	Threaten	1.4668

The common feature of the verbs is that they are force-dynamic: they involve the notion of effort (*struggle, face, press*), counter-force (*resist, oppose, refuse*) or the lack of it (*elude, allow*), conflict (*challenge, threaten*) or a difference of opinion (*deny, insist, claim*). Many of them are telic, so in combination with *continue* they produce iterative reading: that of repeated complete acts of communication (*continue to insist, continue to deny*).

Cognition verbs are grouped in the next category.

**Table 6**

Distinctive collexemes of *continue*  
to-infinitive: cognition verbs

<b>Believe</b>	<b>8.3925</b>	Examine	2.0696
Suffer	4.731	View	1.9912
Experience	4.1542	See	1.7387
Feel	3.7994	Hear	2.1634
Focus	3.1864	Enjoy	1.3523

They include verbs of experience (*suffer, enjoy, experience*), opinion (*believe, view*), mental process (*focus, examine*) and perception (*feel, see, hear*). Their basic function is to introduce propositions expressing epistemic or evaluative judgements or to describe complete acts of perception. The wide aspectual potential characteristic of cognition verbs is here limited by the matrix verb, which imposes a durative construal: the verbs may denote states (*continue to believe in yourself*), activities (*continue to enjoy their holiday*) or iterative achievements (*continue to hear gunshots*). They are mostly, but not exclusively, non-agentive. The lexemes in the next group in their basic senses denote possession and transfer.

**Table 7**

Distinctive collexemes of *continue* to-infinitive:  
verbs of possession and transfer

Hold	7.299	Get	3.362
Keep	7.2074	Seek	1.5103
Find	4.2138	Bring	1.4854

This group is in fact rather diverse, overlapping with other categories, since the verbs are often used in their extended senses and denote obtaining or retaining possession of a more abstract entity. For instance, the verb *hold* frequently occurs in combinations describing extended influence (*hold sway/allure/appeal/authority*) while *keep* usually forms the resultative construction (*continue to keep crime down/people awake*), so they resemble verbs of causation and influence. *Get* approximates verbs of change and development, as it often combines with a subject predicative (*get sick/better/worse*) or forms the *get*-passive (*get vaccinated/ripped off*). *Find* is mostly used as a mental verb with the meaning of 'realize' or 'discover'. So, although the verbs are characterized by particularly varied usage, they still conform to the general pattern visible in other categories.

The last group of collexemes includes verbs of motion:

**Table 8**

Distinctive collexemes of *continue*  
to-infinitive: verbs of motion

<b>Come</b>	<b>4.0808</b>	Follow	2.1439
Meet	2.8402	Flow	2.034
Lag	2.6443	Lead	1.6873
Leave	2.363		

Some of the verbs are telic (*come, meet, leave*) while others describe imperfective motion (*follow, flow, lead*). The characteristic trait is, however, that the motion is relational: the verbs are either deictic (*come* – the most distinctive verb in this category) or they denote directed motion relative to someone or something (*lag, follow, lead*).

Table 9 below summarizes the collexeme types of the *continue* to-infinitive construction. They have been rank-ordered according to the combined collocation strength of all their lexemes, which is taken to reflect the overall distinctiveness of each category.



**Table 9**  
Distinctive collexemes of *continue*  
*to*-infinitive: ranking of types

Type of collexemes	Dominant verb	Number of verbs	Average collocation strength	Combined collocation strength
State	<i>be, have</i>	9	Infinitive (7.5796625)	Infinitive (60.6373)
Change and development	<i>grow</i>	24	5.552916667	133.27
Causation and influence	--	20	4.10682	82.1364
Communication and interaction	<i>insist</i>	16	3.53886875	56.6219
Cognition	<i>believe</i>	10	3.35787	33.5787
Possession and transfer	--	6	4.17965	25.0779
Motion	<i>come</i>	7	2.541928571	17.7935

The most distinctive collexemes of *continue to*-infinitive denote states and non-agentive processes. Verbs that combine with human subjects are positioned further down the list; moreover, they are not typically agentive, but relate to concepts such as cognition, possession and motion. More typical realizations of the transitive schema involving direct physical causation are conspicuously absent from the list.

The evidence above suggests that the *continue to*-infinitive construction is motivated by the path schema, realized differently in different domains. With states, non-agentive processes and mental verbs the *to*-infinitive introduces the notion of epistemic distance. The collexemes of these categories refer to events which require assessment or interpretation, either because they involve epistemic and value judgements (*believe, improve, thrive*) or states and durative impersonal processes (*decline, influence*), which extend in time beyond the act of perception and thus cannot be directly observed and require a certain

amount of inference (Noël 2003: 18). With more agentive collexeme types, which are, however, less distinctive for the construction, the infinitive brings in the aspect of goal-orientedness and direction. Verbs of motion refer to deictic or relational movement (*come, follow*) while with verbs of interaction and communication the directionality inherent in the to-infinitive is realized as force-dynamics, since the collexemes denote forceful and directed communicative actions (*deny, insist*). The complement event is usually complete, viewed as a whole, and rather than on the process itself, the emphasis lies on its result, interpretation or evaluation.

### 3.3.2. Distinctive collexemes of *continue -ing*

Two semantic categories are represented among the collexemes of both constructions: motion and communication verbs. There are, however, considerable differences between the types of lexemes that they contain. Whereas the motion verbs attracted by *continue to-infinitive* express the concept of deictic or relational movement, the collexemes of the *-ing* construction focus instead on the manner of motion.

**Table 10**

Distinctive collexemes of *continue -ing*: verbs of motion

<b>Walk</b>	<b>95.5381</b>	Ride	3.266
Drive	10.0814	Pace	2.8258
Run	7.9468	Chase	2.1673
Move	6.3204	Rock	2.0043
Travel	4.0555	Head	1.47
Swim	3.5657	Dance	1.3913

The verbs specify the speed (*walk, run, pace*), mode (*drive, ride, swim*) or general character (*travel, chase*) of motion. They profile the path of movement rather than its goal or starting point, which is consistent with the unbounded construal produced by the *-ing* form. They are mostly non-relational, with the possible exception of *chase* and *head*, and as opposed to the collexemes

of *continue to*-infinitive, they are uniformly durative and predominantly atelic.

Verbs of communication and interaction distinctive for *continue -ing* are listed in Table 11.

**Table 11**

Distinctive collexemes of *continue -ing*:  
verbs of communication and interaction

<b>Talk</b>	<b>89.7903</b>	Look	2.7224
Speak	10.7778	Discuss	2.7078
Sing	9.9782	Stare	2.5595
Yell	3.9805	Scream	1.8914
Chat	2.7754	Tell	1.4715
Laugh	2.7702	Describe	1.4071

Similarly to motion verbs, the communication and interaction verbs distinctive for *continue -ing* profile imperfective actions in progress, without their boundaries. In other words, the verbs focus on the process of communication rather than its content or result: the most characteristic verbs are atelic (*talk, speak, yell*) whereas more telic verbs, *tell* and *describe*, are only marginally distinctive, positioned at the bottom of the list. The verbs *look* and *stare* included in the category also follow this pattern: they are atelic and agentive, and as opposed to central perception verbs distinctive for the *to*-infinitive construction (*see, hear, feel*), they profile the process of perception rather than its content. While the collexemes of *continue to*-infinitive describe forceful interaction between the participants of a communicative act together with its interpretation (*insist, deny, refuse*), the verbs characteristic for the *-ing* construction closely focus on one participant only, describing in detail the type of sounds produced (*speak, sing, laugh, yell*), but not their interpretation or the intended effect on the listener. This construal results from the conceptual proximity inherent in the *-ing* construction: the event is directly perceived and instantly categorized at a very basic level. As opposed to the collexemes of the infinitival cons-

truction, there is no conceptual distance necessary for a more extensive interpretation.

A characteristic group of collexemes contains verbs describing food preparation.

**Table 12**

Distinctive collexemes of *continue* -ing: culinary verbs

<b>Cook</b>	<b>84.4527</b>	Roast	12.335
Bake	37.5642	Sauté	7.5355
Beat	27.5865	Stir	5.5376
Add	16.5274	Simmer	4.9341
Whisk	12.9695	Process	2.9138

The group is indicative of a very specific usage context for *continue* -ing: that of recipes and instructions in general. Even verbs which are not semantically limited to food preparation (*beat*, *add*, *process*) still occur in their culinary sense in the majority of tokens of the construction (respectively 82 %, 69 % and 62 %) and their remaining uses are almost exclusively in other types of instructions. The context also has characteristic syntactic features: the matrix verb is used in the imperative and there are frequent occurrences of the null-instantiation construction – the object is not explicitly mentioned as it can easily be recovered from the context (*add carrots and continue stirring*  $\emptyset$ , *continue whisking*  $\emptyset$  *until smooth*). Thus both participants, the agent and the patient, are backgrounded, while the sole focus is on the process itself. Such a combination of a specific discourse function with a particular set of syntactic features is responsible for the high distinctiveness of the verbs.

The remaining collexemes do not show such clearly distinguishable semantic categories, therefore the further divisions are based on the verbs' lexical aspect and event structure. The first group includes iterative, i.e. serial actions.

**Table 13**Distinctive collexemes of *continue* -ing: iterative actions

Fund	9.1211	Count	2.0574
Pay	6.2677	Pick	2.0287
Plant	5.1583	Spend	1.7755
Take	4.6504	Throw	1.7528
Send	3.7333	Publish	1.7472
Fire	3.0969	Hammer	1.6783
Raise	2.6537	Collect	1.6179
Subsidize	2.5349	Lay	1.5358
Buy	2.2173	Deliver	1.43
Alternate	2.1441		

As complements of *continue*, the verbs denote series of actions: *continue to fire* implies repeated shots, *continue to buy* – repeated purchases and *continue to alternate* – repeated changes. Many of the verbs involve the notion of transfer (*take, send, throw, deliver*) or financial transactions (*pay, buy, spend, collect*). Others describe short repetitive physical actions (*fire, pick, hammer*).

A larger group of verbs denote durative actions.

**Table 14**Distinctive collexemes of *continue* -ing: durative actions

<b>Work</b>	<b>58.325</b>	Play	5.2963
Live	12.1366	Learn	4.036
Use	11.7114	Study	2.8004
Fight	10.3168	Research	2.4041
Officiate	9.3309	Abuse	2.33
Search	9.0592	Coach	1.9586
Operate	7.6914	Test	1.8263
Teach	7.4716	Campaign	1.6783
Try	6.2802	Practice	1.534
Excavate	5.8114	Compete	1.3487

The verbs include some common intransitives (*live, work, play*), lexemes denoting long term processes of transmitting or acquiring skills and knowledge (*learn, study, teach, coach, practice, re-search*) and verbs of extended forceful interaction implying conflict or competition (*fight, officiate, campaign, compete*). As activities, they are dynamic, atelic and durative, so their common features are agentivity and the continuative construal of the event.

The final group of collexemes comprises accomplishments.

**Table 15**

Distinctive collexemes of *continue* -ing: accomplishments

<b>Read</b>	<b>55.343</b>	Cut	3.8419
Eat	12.346	Make	2.9858
Write	9.9148	Build	2.9651
Paint	7.2196	Do	2.8055
Film	6.9615	Pull	2.7761
Wrap	5.8012	Dig	1.9005

Accomplishments are dynamic and durative, but as opposed to activities, they are telic. The verbs above are syntactically transitive and what is more, they approximate the semantic transitive prototype: they denote specific physical actions, have agentive subjects and objects whose affectedness determines the completeness of the event. Characteristically for this category, the actions can be construed either as durative or iterative, depending on the boundedness and specificity of the object (*continue reading this story* vs. *continue reading novels*). If the verbs are used intransitively, the action can also be construed as continuative (*continue reading aloud*).

The distinctive collexemes of *continue* -ing construction are rank-ordered in Table 16.

**Table 16**Distinctive collexemes of *continue* -ing: ranking of types

<b>Type of collexemes</b>	<b>Dominant verbs</b>	<b>Number of verbs</b>	<b>Average collocation strength</b>	<b>Combined collocation strength</b>
Culinary verbs	<i>cook</i>	10	21.23563	212.3563
Durative actions	<i>work</i>	20	8.16736	163.3472
Motion	<i>walk</i>	12	11.71938333	140.6326
Communication and interaction	<i>talk</i>	12	11.06934167	132.8321
Accomplishments	<i>read</i>	12	9.57175	114.861
Iterative actions	--	19	3.010594737	57.2013

The groups of collexemes most characteristic semantically are culinary verbs and motion verbs, followed by verbs of communication and interaction. As opposed to the collexemes of the infinitive construction, the majority of them describe directly perceived physical actions, with the emphasis on their exact manner. In terms of lexical aspect, the verbs' most distinctive feature is durativity. The collexemes of *continue* -ing can be both telic and atelic, but their significance decreases as telicity increases: the two telic categories, accomplishments and iterative actions, are the lowest in the ranking. The collexemes of *continue* -ing are more distinctive in comparison with the infinitival construction and the dominant verbs in each group are much more characteristic. At the same time, the collexemes are less distinct from each other: while the lexemes characteristic for *continue to*-infinitive divide into agentive and non-agentive ones, the verbs distinctive for the -ing construction are uniformly agentive, dynamic and durative.

#### 4. Conclusions

The results of the distinctive collexeme analysis yield themselves to the interpretation in terms of conceptual proximity and distance. *Continue* -ing codes conceptual proximity and it is used for activities that can be directly experienced and immediately categorized, while *continue to*-infinitive implies epistemic distance and denotes events which require assessment or interpretation, either because they involve value judgements (*worsen, improve*), complete speech acts (*claim, refuse*) or states and durative impersonal processes, whose categorization requires some inference (*affect, support*). The distinction between conceptual proximity and distance is also visible in the specificity and lexical complexity of the verbs. The collexemes of *continue* -ing are predominantly basic level terms, describing physical actions and associated with specific mental images. They stand in stark contrast to the collexemes of the infinitive construction, which are much more abstract and generic. Even the length of the lexemes differs: among the verbs distinctive for *continue* -ing: 77 % are one syllable words, while *continue to*-infinitive has only 45 % of one-syllable collexemes.

Collexeme analysis at the level of individual semantic classes appears to be a promising method: it reveals regularities connected not only with the interplay of a specific type of matrix verb with the two complement constructions, but also patterns related to particular semantic classes of complement verbs, whose statistically significant associations with either of the two alternative constructions provide evidence for the semantic content of the constructions themselves. As construction grammarians argue, if constructions were just meaningless formal templates, there would be no visible collocational preferences between syntactic structures and specific lexical items (Stefanowitsch and Gries 2003: 236). As the match between them is evidently not random, the divergent lexical preferences of the two *continue* constructions can be assumed to reflect contrasts in their respective aspectual construal of the complement event.



Particularly interesting regularities can be noticed in the situations where two different complement types associate with similar groups of complement verbs, namely in the case of communication verbs and motion verbs. The fine but fairly regular contrasts between the semantic content of the collexemes reveal subtle differences in the semantic import of the two constructions: the to-infinitive complement associates with verbs denoting deictic or relational movement and forceful, content-oriented speech acts, whereas the -ing complement puts emphasis on the manner of the action – motion or elocution – viewed in extreme close-up. This difference can be illustrated by juxtaposing the single most characteristic verbs in each group: *continue talking* vs *continue to insist* and *continue walking* vs *continue to come*. The notions of proximity and distance, combined with the distinctions related to the verbs' lexical aspect, such as telicity or durativity, have thus proved to be useful in describing the semantic consequences of different aspectual construal of the two complement constructions examined.

There are of course some limitations of the collostructional approach, stemming from the fact that it deals with lexeme types, not tokens (Glynn 2014: 309-310). A lexeme, especially a verbal one, is a whole set of senses and usage patterns. The meaning of a verb may vary greatly with a different aspectual construal or argument structure, which is evidenced in the analysis above by the difficulties in assigning certain verbs to semantic classes due to their varied usage. That is why making generalizations requires a great deal of caution and close reference to corpus data. Thus the results of the present analysis will need to be validated and expanded in the course of further studies with the use of multivariate statistical techniques, which will closely examine a sample of individual tokens of the two constructions.

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