1 Introduction

> A focus on form to the neglect of function is like investigating a human organ such as the liver, without attending to what the liver does: while this is not impossible, it is certain to fail to be explanatory.
>
> Goldberg, *Constructions at Work: The Nature of Generalization in Language*

One of the foundational tenets of construction grammar (henceforth CxG) is that all linguistic forms are meaningful (Goldberg 2013: 16). In this Element, our main objective is to explore exactly what meaning is, how it materialises in language use, and how it should be modelled in a construction-based framework.

A number of key concepts will be introduced and critically discussed throughout the text. Some of them may be understood differently depending on the strand of CxG in which they are encountered (see Part II of Hoffmann and Trousdale 2013 for a detailed overview). Our approach is largely aligned with views developed in mainstream CxG (sometimes known as cognitive CxG, Boas 2013; Morin and Leclercq, in press). More generally, the framework we adopt is also compatible with the cognitive grammar approach of Langacker, who himself acknowledges that 'although the term had not yet been invented, the theory formulated was actually a kind of Construction Grammar' (Langacker 2005: 102). In addition, appropriate references to works from the broad approach of cognitive linguistics will be provided (Croft and Cruse 2004; Geeraerts and Cuyckens 2007).

As we address various issues in the constructionist approach to 'meaning', a number of underlying assumptions will guide our approach throughout. Although some of our readers (seasoned constructionists) may view these assumptions as basic, we wish to spell them out very explicitly. This is done to reach out to a wider readership (i.e., budding constructionists, students, or experienced linguists from other fields), as well as to ensure theoretical consistency, both in the overview that we present in the first half and the proposals that we make in the second half. In particular, assumptions about what constructions are exactly should be borne in mind throughout this Element. Goldberg (1995: 4, 2006: 5, 2019: 7) gave a number of technical definitions that have been critically discussed (Ungerer and Hartmann 2023: 5–11). A key point is that constructions are symbolic units, that is, form–meaning pairs. Though seemingly basic, this definition is not trivial, since CxG assumes that *all* linguistic knowledge consists of constructions: as in Goldberg's (2006: 18) famous words, 'it's constructions all the way down'. Behind this catchphrase lies one of CxG's most foundational design traits, namely, its non-modularity: there is no distinction between lexicon, syntax, and semantics, but they rather form an integrated whole. In this approach,

language users possess only one repository of linguistic knowledge, the 'constructicon' (Jurafsky 1992). The constructicon is the repository of all existing constructions, which differ only in terms of complexity and schematicity (Croft and Cruse 2004: 255). To put it simply, the term 'construction' applies across the board to words, morphemes, idioms, and phrasal and clausal patterns. Crucially, all of these units are inherently meaningful. Furthermore, besides containing the entirety of linguistic knowledge, the constructicon is also assumed to take the shape of a structured network (see Diessel 2019a, 2023). As we will see, such a view has important implications for various aspects of constructional meaning.

The first part of this Element is meant as a primer on the meaning of constructions. Section 2 introduces the meaning-based assumption and aims to answer the question of what constructional meaning is. Section 3 then considers the question of how meaning is achieved in constructional use. The second aim of this Element is to provide a more advanced theoretical demonstration of how meaning should be modelled in CxG. It puts forward an explicit taxonomy of constructional meaning (Section 4.1); it explains how this taxonomy enables us to more adequately explain constructional variation (Section 4.2); and finally, it puts the limits of the constructicon to the test by considering the status of phonological knowledge (Section 4.3).

2 The Meaning-Based Assumption

2.1 Meaning Drives Grammar

Achieving an explicit model of meaning and its relationship with other aspects of language has always been a significant challenge in linguistics. For example, several accounts of the history of the field in the United States identify meaning as a major point of contention in the influential split between generative linguistics and cognitive linguistics originating in the 1970s (Harris 1993, 2022; Huck and Goldsmith 1996). The former approach, having gained increasing momentum over the 1950s and 1960s (Chomsky 1957, 1965), had put forward an 'interpretive' model of semantics. In this model, grammar was viewed as being essentially driven by an autonomous 'deep structure', which guided the interpretation of linguistic meaning in terms of objective truth conditions. Against and from within this popular model, former students and colleagues of Chomsky's, including George Lakoff, James McCawley, John Ross, and Paul Postal (Harris 2022), formulated an alternative approach known as generative semantics, which relied on what we will henceforth refer to as the 'meaning-based assumption': namely, the

assumption that semantic structure is the true driver of grammar and linguistic knowledge. This meaning-based assumption came to be shared in the following years by an increasingly diverse family of functional approaches, many of which are now somewhat loosely subsumed under the label of 'cognitive linguistics' (Winter and Perek 2023), such as the theories of cognitive semantics (Talmy 2000), conceptual metaphor (Lakoff and Johnson 1980; Lakoff 1987), frame semantics (Fillmore 2006), cognitive grammar (Langacker 1987, 1991), and CxG (Hoffmann and Trousdale 2013): the theoretical framework we focus on in this Element.

Construction grammar, as a cognitive linguistic 'theory of syntax' (Croft and Cruse 2004: 4), is thus a meaning-based approach – indeed, as suggested by its historical context, a 'meaning-born' approach. First, it holds that all linguistic forms must be studied in their own right as inherently meaningful objects. 'Grammar does not involve any transformational or derivational component. Semantics is associated directly with surface form' (Goldberg 2013: 15). This is a crucial tenet in CxG which posits that any variation in form, as subtle as it may be, cannot simply be viewed as an unconstrained choice between variants of an underlying structure, but that each variant features its own set of idiosyncratic functional constraints (Goldberg 2002). A large body of work in CxG has thus investigated the topic of syntactic alternations to try and pin down the exact meaning contours of forms that were previously considered identical in the transformational accounts of generative grammar. Take, for instance, the Ditransitive/*to*-Dative alternation (1) and the locative alternation (2).

(1) a. Mum gave her friend a present.
b. Mum gave a present to her friend.

(2) a. The cook sprinkled the meat with salt.
b. The cook sprinkled salt on the meat.

In both cases, the alternatives were long considered formal paraphrases or transformations from *a* to *b* where the propositions are taken to be identical (Chomsky 1957, 1965, 1971; Katz and Postal 1964). In CxG, the sentences in *a* and *b* involve different constructions that each express their own unique meaning. In (1), for instance, while the Ditransitive construction (1a) and the *to*-Dative construction (1b) both express the notion of transfer (*X causes Y to receive Z*), the choice between these constructions is driven by a key semantic distinction. Namely, the *to*-Dative construction has been shown to iconically encode a greater conceptual distance between the agent (Mum) and the beneficiary (her friend) than the Ditransitive construction (Thompson and Koide

1987: 400; Diessel 2019b: 71).[1] Similarly for the locative alternation (2), it has been demonstrated that the first alternative involves the *with*-Applicative construction, which encodes a holistic reading of the event (foregrounding the meat being fully covered in salt), while the second alternative involves the Locative Caused-Motion construction, which encodes a partial reading of the event (foregrounding the action of the sprinkling, with only part of the meat being sprinkled) (Anderson 1971; Perek 2012).

Alternation studies of this type constitute 'a sizeable segment of the quantitative studies executed within construction-grammar' (Pijpops 2020: 283), and they are all the more significant in that they shed light on a range of other principles of linguistic knowledge and use. One of them is the 'principle of no synonymy' (Goldberg 1995: 67), recently reframed by Leclercq and Morin (2023) as the 'principle of no equivalence' (see Section 4.2), which basically states that any difference in form entails a difference in meaning. This principle captures the general observation that meaning is a crucial structuring force of linguistic knowledge. It also lays the ground for another essential cognitive process known as 'statistical preemption' (Goldberg 2019: 74), which refers to speakers' natural disposition 'not to use a formulation if an alternative formulation with the same function is consistently witnessed' (Boyd and Goldberg 2011: 55). As Leclercq and Morin (2023: 4) point out, 'while the principle of no synonymy posits that no two constructions have the exact same function, statistical preemption ensures that this be the case by blocking the use of an alternative (or new) form when a function is already associated with a specific construction'. This is why *stealer*, for instance, though a morphologically plausible construct of the V-*er* agentive construction, is blocked by the existing noun *thief* (Hoffmann 2022: 289), which already conventionally expresses the concept of 'a person taking something without the owner's permission'. Besides being a structuring force of linguistic knowledge, meaning is thus also a driving force of language use.

The specific issues considered in the preceding paragraphs illustrate the relevance of meaning applied to specific linguistic processes, but these applications are percolations from a more general and fundamental trait of language: that its 'primary function is to convey information' (Goldberg 2013: 16).[2]

[1] In fact, Goldberg (1995: 90) analyses *to*-Dative constructions as metaphorical extensions of Caused-Motion constructions and considers that they express the meaning *X causes Y to move to Z* – a description which also captures the greater motion involved with the *to*-Dative construction.

[2] With this formulation, Goldberg could be taken to have fallen prey to the descriptive fallacy (Austin 1962: 3), whereby language only serves to make truth-evaluable statements. However, this is not the case, since Goldberg (2013: 16) explicitly adopts a broad acceptation of the term 'information' which applies to 'semantic or pragmatic (including information theoretic) distinctions'.

Meaning is thus at the heart of the constructional enterprise, to such an extent that from the oft-cited phrase that grammar is 'constructions all the way down' (Goldberg 2006: 18), we want to highlight the corollary that grammar is indeed *meaning* all the way down, given that all forms are symbolically associated with a specific meaning (thereby forming 'constructions'), and that this meaning motivates the use of these forms. Constructions, defined in CxG as the basic building blocks of language, emerge from our intersubjective communicational needs (Schmid 2020; Silvennoinen 2023), and these needs also explain the underlying processes involved in meaning variation and change (see Section 3.3).

2.2 Meaning Is Usage-Based

The meaning-based assumption of CxG is not just about the relationship between meaning and other aspects of language and grammar. It also concerns the nature of constructional meaning per se. As a non-modular approach to language, CxG assumes that meaning is acquired following the same principles as the rest of our linguistic knowledge. In this approach, linguistic knowledge is taken to be 'usage-based' and is described as directly emerging from language use (Bybee 2013; Perek 2023). It is the outcome of 'the cognitive organization of one's experience with language' (Bybee 2006a: 711), which Diessel (2019b: 51) defines as follows:'grammar is a dynamic system of emergent categories and flexible constraints that are always changing under the influence of domain-general cognitive processes involved in language use'. If, as argued in the previous section, grammar is inherently meaningful, it follows that meaning should also be viewed as a conceptual system that is dynamically shaped by usage. In this section, we highlight three major dimensions along which meaning is usage-based: first, it is emergent; second, it is experiential; and third, it is conventional.

2.2.1 Meaning Is Emergent

The first dimension pertains to processes of usage at play in the formation of meaning. According to usage-based theory, which CxG aligns with, each exposure to individual tokens of experience, known as 'exemplars' (Bybee 2010), leaves a memory trace in the mind of a language user (Goldberg 2019: 13). Although this memory trace includes any of the salient aspects of the original token of experience (see following paragraphs), it is considered 'lossy', in that not all details of the experience are retained (Goldberg 2019: 6). The first memory trace forms its own structured representation, against which memory traces of upcoming exemplars are

analogically related in terms of (dis)similarity. Similar traces strengthen the initial representation and give rise to 'an EMERGENT CLUSTER (or "cloud"), which constitutes what we think of as a single coherent word meaning' (16).[3] Across contexts of use, constructions will tend to be associated with different clusters, thus forming their different (polysemous) meanings. These are constrained by two main structural principles: schematicity and prototypicality. The former, expounded by Langacker (2010), holds that besides retaining individual instances of use, processes of abstraction and generalisation also contribute to shaping the conceptual clusters and to forming new ones based on shared features (Goldberg 2006: 62). The latter posits that one of the clusters is construed as the 'prototypical' meaning of a construction given its particular conceptual centrality and cognitive salience (Mervis and Rosch 1981; Lakoff, 1987). As a consequence of these two principles, the meanings of constructions are assumed to be organised in structured networks of representation (Langacker 2010: 266; Lemmens 2016). Let us consider the following examples with the verb *run* (Figure 1).

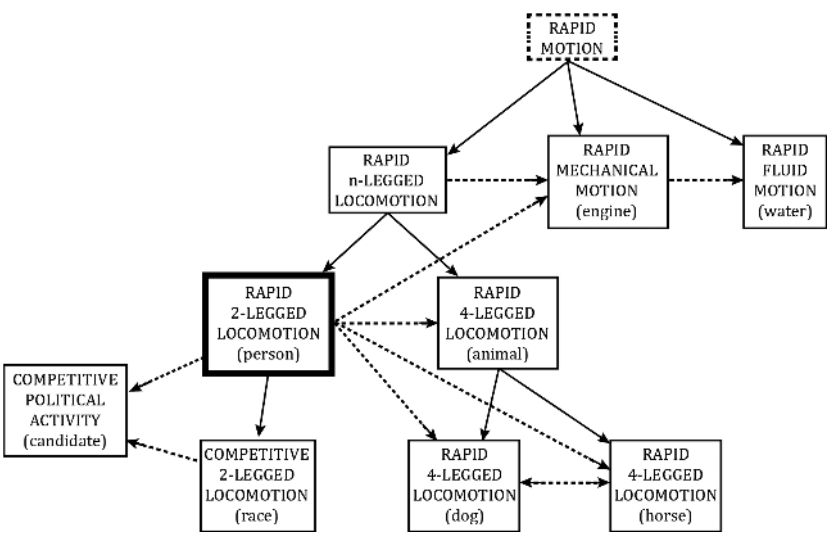

Figure 1 Conceptual network for the verb *run* (from Langacker 2010: 267).

[3] In CxG, the emergence of meanings as an outcome of usage is of course not limited to words, but applies to all constructions in general.

The representation in Figure 1 summarises a number of foundational aspects of the conceptual representations which the verb *run* is associated with. First, it is striking that the verb points to a multitude of related meanings (i.e., clusters), including 'rapid 2-legged locomotion' (e.g., *Evan ran the marathon in 3 hours*), 'rapid mechanical motion' (e.g., *This car runs at 200 mph*) or 'competitive political activity' (e.g., *Why did Tom choose to run for mayor?*). Second, it is notable that these meaning clusters are not listed as unrelated dictionary entries in our minds, but are interconnected and structured both by schematicity and prototypicality. Relations of schematicity are represented by the solid arrows. So for instance, the highest cluster, 'rapid motion', schematises the features that are shared by all the other clusters in the network. Prototype effects are captured by the box in bold, with broken arrows representing conceptual extensions from the prototype.

This specific example focuses on a network of word meanings, but given the continuity from lexicon to syntax assumed in CxG, schematicity and prototypicality also characterise networks of grammatical constructions. For example, Goldberg (1995: 38) showcases the role of prototypicality in shaping the network of meanings associated with the English Ditransitive construction (Subj V Obj1 Obj2, see Example (1a)). She shows that a variety of meaning clusters radiates from the prototypical centre 'agent successfully causes recipient to receive patient' (e.g., *She fed the cat some fish*), including, for instance, the extensions 'agent causes recipient not to receive patient' (e.g., *My brother's boss denied him a pay raise*) and 'agent intends to cause recipient to receive patient' (e.g., *Dad knitted me a jumper*).

Regardless of the type of construction involved, it is crucial that the general process of concept formation described in this section is viewed as being constantly regulated by frequency effects in experience (Bybee 2013). Two main frequency effects that are commonly discussed are token frequency and type frequency (Kapatsinski 2023), which have an impact on cognitive entrenchment, levels of schematicity, and ease of activation and processing (Diessel 2007; Schmid 2012).

2.2.2 Meaning Is Experiential

The first dimension accounts for the way meaning comes about in the speaker's mind, that is, via emergent processes. We now turn to the second dimension, which accounts for the content of the meaning clusters. Because meaning emerges through exposure to individual usage events, it follows that the content of the meaning clusters themselves is rooted in experience. This is why meaning can be described as experiential:

all facets of the experience witnessed in a usage event are in principle liable to becoming entrenched. A useful definition of 'experience' is provided by Johnson (1987: xvi): '"experience," then, is to be understood in a very rich, broad sense as including basic perceptual, motor-program, emotional, historical, social, and linguistic dimensions. ... Experience involves everything that makes us human – our bodily, social, linguistic, and intellectual being combined in complex interactions that make up our understanding of our world.' It follows that meaning is inseparable from the contexts from which it emerges. Similarly to its non-modular approach to the lexicon–syntax distinction, CxG does not distinguish between a purely 'linguistic' context-free meaning and encyclopaedic knowledge. Rather, it assumes that the meaning of constructions is inherently encyclopaedic and that constructions provide points of access to this encyclopaedic knowledge (Langacker 2008: 39; Goldberg 2019: 12; though see Section 3.1 for discussion). Such an approach is to be related to the assumption of embodied cognition taken by most cognitive linguistic frameworks (Evans 2012), including CxG, sometimes explicitly so (see Bergen and Chang 2013).

What is important to keep in mind here is that facets of experience are not entrenched as an unstructured 'grab bag' of knowledge (Lemmens 2017: 107), but on the contrary form a highly structured network of related conceptual nodes. On this view, for example, the noun *bear* provides a point of access to a rich, cross-modal network of nodes centred on the prototypical brown bear, specifying its shape and colour, the super-category 'animals' and 'hibernating mammals' to which it belongs, its preferred natural habitat, the customary activities of eating honey and fishing for salmon in which it engages, the potential danger it represents for humans in particular due to its speed and especially long and sharp claws, and many more. Again, the encyclopaedic nature of constructional meaning can be observed on all points of the lexicon–syntax cline. So, for instance, as discussed by Schmid (2014: 240), the more complex idiomatic expression *I love you* 'calls up a whole world of associations', including, but not limited to, typical situations of use ('romantic'), participants engaging in this social interaction ('lovers'), the specific type of emotion that it expresses ('deep affection'), and the stereotypical use of the expression in cultural products ('melodramatic movies' or 'commercial pop songs'). Likewise, the schematic grammatical construction of the DITRANSITIVE does not only signify the very highly abstract meaning of 'X CAUSES Y TO RECEIVE Z' (cf. Goldberg 1995: 49), but it is also assumed to activate a rich network of knowledge relating to 'what a transfer actually involves, ... the respective roles of agents, recipients and themes and the relation between them, as well as who/what can usually perform these roles' (Leclercq 2024a: 20).