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Is construction grammar cognitive?

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Abstract

This paper examines the view that usage-based construction grammar is a cognitive theory of language. In the usage-based (or cognitive) strand of constructional work, constructions are typically theorised as mental representations. A culmination of this view was Adele Goldberg's (2006) definition of construction, which states two criteria for construction-hood: formal/functional idiosyncrasy and sufficient frequency, which is presumed to lead to a pattern being represented mentally, even redundantly. In this paper, this view is examined against the backdrop of the distinction between mental and social levels of analysis. The paper argues against treating constructions as mental representations by definition, and it also advocates caution in using the notion of construal in characterising constructional meanings. Constructions are argued to be social conventions that function as intersubjective cues for meaning. Specific instances of constructions (i.e. constructs) are produced with the aid of mental representations, but constructions are not necessarily coextensive with these representations. Usage-based construction grammar is a cognitive theory, but only in the sense of constraining individual-level phenomena.

1 Introduction

> An objectivist epistemology which studies the third world can help to throw an immense amount of light upon the second world of subjective consciousness, especially upon the subjective thought processes of scientists; but *the converse is not true*. (Popper 1979: 112, emphasis in the original)

Construction grammar is typically portrayed as a theory that aims to characterise language from a cognitive or mental perspective. It shares many features with the wider and more diffuse movements of cognitive and usage-based linguistics, even though not all construction grammarians count themselves as cognitive or usage-based linguists. The ways in which construction grammar is assumed to be cognitive include: prototype- or exemplar-based categorisation, an encyclopaedic and frame-based conception of meaning, a network model of the construct-i-con, and the acceptance of redundant storage of constructions in the mind. However, such views are often accepted as a package deal by practitioners, to be assumed rather than tested, and their status in cognitive or linguistic theory is not always revised even when new evidence for or against a given proposal has accrued. What is more, there has been a relative dearth of research on the theoretical and philosophical underpinnings of construction grammar. To commemorate the first decades of construction grammar, and possibly to pave the way for the next 35 years of constructional approaches, this paper aims to contribute to a better understanding of their central notion – construction.

In this paper, I will question the idea that usage-based construction grammar is self-evidently a cognitive or mental theory and that constructions are mental phenomena by definition. Instead, I will argue for a 'social ontology' (Itkonen 1997; Elder-Vass 2012) for

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construction grammar, particularly corpus-based constructional research. However, my remarks are potentially relevant for other linguistic approaches (constructional or not) that are concerned with the interplay of the individual language user and the language community that they are a part of. As the foregoing suggests, my starting point is the separation of the individual (mental) and collective (social) levels of analysis. This separation has many precedents across disciplines, including of course de Saussure (1955 [1916]). Among linguists, one of the best-known discussions of the relationship between the individual and the collective has been Karl Popper's three-world ontology (see e.g. Itkonen 1997; Geeraerts 2016). According to Popper (1979: 157), language is a phenomenon that exists in three ontological planes, or worlds in Popper's terminology. First, language is physical (Popper's first world): it exists as sound waves, as written artifacts, and as manual and non-manual signs, for example. Second, language is mental (Popper's second world): it is used to express the language user's subjective views, and when the message is processed by the receiver, their mental state is changed in some way. Additionally, language as a second-world phenomenon is a product of cognitive processes that enable language users to process, produce and acquire it. Third, language is social (Popper's third world; see Bloor 1974): it exists as a set of conventions to which individual members of a community have access but which is not identical to any of their mental 'grammars' and thus cannot be reduced to any of them. Language as a third-world entity allows members of a community to transfer information in public representations.[1]

Popper's view can be characterised as emergent materialism: while the material first world provides the basis for the other worlds, the second world has properties that are not present in the first, and the third world has properties that are not present in the first two. As the 'Five Graces Group' notes, '[a]n idiolect is emergent from an individual's language use through social interactions with other individuals in the communal language, whereas a communal language is emergent as the result of the interaction of the idiolects' (Beckner et al. 2009: 15). However, the precise formulation of Popper's emergentism may be in need of improvement. While Popper appears to see the third world as a repository of all collective entities, it may be a better idea to see the third world as something actively and continuously produced by the second. On this view, language as a collective phenomenon exists as a result of being represented and used by individual minds; its existence happens through the individuals that share it (Elder-Vass 2012; Vetchinnikova 2017). In usage-based linguistics, ideas similar to Popper's have been expressed in Schmid's entrenchment and conventionalisation model (Schmid 2020), which makes a principled distinction between entrenchment as a cognitive process and conventionalisation as a social one, both united by language use, which they generate and are generated by. However, Schmid (2020: 11) jettisons the term *construction* precisely because of its cognitive overtones. I propose that we keep the term *construction* but purge its definition of its mentalist content.

My main claim is that constructions are collective entities, and that, as a theory of grammar, construction grammar is a theory of how language functions as a collective phenomenon. To the extent that construction grammar is cognitive, this is secondary to its social character. I do not preclude the possibility that language users might have mental representations that correspond more or less exactly to constructions-as-social-

[1] When writing about community in this paper, I am drawing on the notion of language community, defined by Silverstein (2015: 8) as 'a social group, generally a primary reference group, the members of which are, by degrees, oriented to a denotational norm, however much within its compass they recognize situated variation'. This differs from a speech community, which may use one 'denotational norm' (i.e. language variety) or many and which shares a set of communicative norms that go beyond the purely linguistic.

conventions or that language users may represent language in terms of form–function pairings, but I do argue that we would be better off without making mentalism a definitional issue in constructions. In particular, I would argue against inferring mental representations from frequency data, unless that frequency data has specifically been collected and analysed in such a way that it allows the researcher to approximate the linguistic habits of individuals in a cognitively meaningful way (see e.g. Vetchinnikova 2017; Anthonissen 2020; Neels 2020). In this, I follow Dąbrowska (2016), reinterpreting her view explicitly in the context of construction grammar.

2 A definition of construction

The mentalist strand of construction grammar culminates in Goldberg's influential definition of construction:

> All levels of grammatical analysis involve constructions: learned pairings of form with semantic or discourse function […]
>
> Any linguistic pattern is recognized as a construction as long as some aspect of its form or function is not strictly predictable from its component parts or from other constructions recognized to exist. In addition, patterns are stored as constructions even if they are fully predictable as long as they occur with sufficient frequency. (Goldberg 2006: 5)

This passage contains two definitions, which Goldberg presents as equivalent. On the one hand, constructions are those form—function pairings that are learned. On the other, these pairings can equivalently be described as the conjunction of two classes of entities: idiosyncratic patterns and those patterns that are compositional but so frequent as to be entrenched in a language user's cognition. As such, Goldberg's view of constructions is thoroughly psychological: constructions exist in the mind of an individual as mental representations. Being a learned form–function pairing is presented as a necessary and sufficient condition of construction-hood.

Including the frequency criterion was partly a response to the criticism of Goldberg's earlier definition of construction, which was entirely based on idiosyncrasy (Goldberg 1995). It is evident that language users store many patterns redundantly, as chunks or otherwise partly or fully prefabricated items (e.g. Sinclair 1987; Bybee 2006). As Langacker (1987; 2005) notes, if constructions are equated with mental representations, and if a language user's construct-i-con is the full store of constructions (defined as such representations), it follows that even redundant patterns are stored as patterns. There was thus a theoretical justification for including the frequency criterion.

In addition, invoking frequency was methodologically convenient. Making claims about the contents of the mind is hard since minds cannot be observed directly. Text frequency, on the other hand, is readily observable. The definition thus makes the enticing promise that we can infer the contents of individual language users' mental representations from corpus data collected from the collective level.

While Goldberg has since distanced herself from some aspects of her 2006 definition (Goldberg 2019: 54), it continues to hold sway in the construction grammar community. For example, the most recent textbook on construction grammar endorses it (Hoffmann 2022: 43). It has had a strong influence on the research agenda of usage-based construction grammar, which is now typically concerned with providing 'plausible' or 'realistic' models of how a single construction or a family of constructions is represented in a language user's cognition (see e.g. Hilpert 2018 and Zehentner 2020 for discussions of this

position in historical studies in construction grammar). For example, Ungerer (2023) proposes that constructionhood is a gradient notion that can be quantified through frequency data as well as other quantitative indices such as dispersion. Hilpert (2017) discusses several frequency measures and attempts to relate them to cognitive phenomena in historical linguistics. Divjak (2017; 2019) suggests six per million words as a threshold level where language users begin to develop intuitions about the acceptability of a word in a given pattern; the patterns that these intuitions concern may be substantially rarer than this. The criterion of sufficient frequency has been particularly important for corpus-based studies that have been couched in a constructional framework. There has been no shortage of them since in many respects, the combination of Goldbergian construction grammar and corpus methods seems to work rather well.

On the other hand, the notion of 'sufficient frequency' is obviously problematic. The definition is phrased in such as way that it suggests a linear relationship between token frequency and degree of entrenchment. While this view seemed reasonable in 2006 (see also Langacker 1987: 59; Bybee 2006), it is increasingly untenable. Many cognitive linguists and construction grammarians have long noted that the relationship between (token) frequency and mental representations is indirect (e.g. Arppe et al. 2010; Schmid 2010; Divjak 2019). While frequent exposure obviously facilitates learning, even a single exemplar may produce a strong memory trace (see Divjak 2019: 122–123 for a review). This makes the idea of a single threshold questionable. In all likelihood, the threshold would be variable across individuals, and probably also within individuals because of such issues as fatigue and attention. Additionally, while very frequent patterns tend to have strong memory representations, some rare patterns do as well (Divjak 2017; Flach 2020b). In addition, the most frequent usage pattern may not be the most prototypical one, as measured by other methods (Arppe et al. 2010). Furthermore, there are many types of corpus frequency, in addition to simple token counts. Many frequency effects may be explained by confounding variables such as high dispersion, which in cognitive terms corresponds to distributed practice (see Gries 2022). Even those who defend the inference from corpus data to cognitive entrenchment (e.g. Stefanowitsch & Flach 2017) note that corpus linguists need to move beyond token frequencies to statistical association and other more complex measures.

A further issue in defining constructions through frequency is that it is not clear where the threshold lies for 'sufficient frequency', a problem more generally known as the Sorites paradox (e.g. Börjars et al. 2015; Flach 2020a; see also Ungerer 2023). If even one token can leave a memory trace strong enough that it leads to entrenchment, then one occurrence is enough for construction status on Goldberg's definition. To her credit, Goldberg is aware of this and has later adopted the position that a single token can indeed form the basis for a mental representation (Goldberg 2019: 54). However, under this definition, it is not clear what differentiates constructions from non-constructions. For the notion of construction to have any analytic force, we would ideally want it to be more restrictive than this.

To summarise, the criterion of sufficient frequency poses many practical problems. As is evident from Goldberg's formulation, the reason for including the frequency criterion is the goal of cognitive plausibility. Because of this, we now turn to the mental view of constructions in more detail.

3 Constructions as mental representations

In usage-based and cognitive variants of construction grammar, constructions have been taken to be mental representations in two slightly different ways: (i.) as categories of language and (ii.) in terms of the semantic content that they encode.[2] I will take up the first of these in this section and the second one in Section 4.

At the outset, we should define what it means to say that construction grammar is a *cognitive* theory of language. Cognition can be defined as information processing. Marr (1982: 24–25) suggests that information-processing tasks can be described at three levels of analysis: computational, algorithmic and implementational. The computational level is concerned with the questions *what* and *why*: it describes the way in which a given information-processing task is carried out as well as the purpose for which it is carried out. The algorithmic and implementational levels are concerned with the question *how*. The algorithmic level (which Marr calls 'representation and algorithm'; Marr 1982: 25) describes the representations that are transformed in the process. The implementational level describes the physical (for example neurological) hardware that is needed for processing.

While some cognitive scientists do not conceptualise their work in terms of Marr's levels (Samuelson et al. 2015) or employ a more fine-grained division of levels (Griffiths et al. 2015), the three levels provide a useful way of explicating what is and is not cognitive about construction grammar. If construction grammar is a cognitive theory of language, it stands to reason that we would be able to state the level at which construction grammar operates. This task is not as straightforward as it could be. Typically, theoretical linguistic descriptions are considered cognitive in the sense of describing the computational requirements for producing and interpreting language – Marr himself explicitly notes that Chomsky's (1965) theory of transformational grammar can be regarded as computational (Marr 1982: 28). Blumenthal-Dramé (2016: 497) suggests that 'corpus-based cognitive linguistic models are cast at the computational level, i.e., at a level quite removed from the brain, and that they are cognitively realistic in the loose sense of imposing constraints on the underlying psychological and neural levels'. In a similar vein, Hoffmann notes that usage-based variants of construction grammar (Goldberg 1995; Croft 2001) 'are not intended to directly model language production and processing' (Hoffmann 2022: 266) and so are presumably intended as computational. Roughly speaking, psycholinguistic models would handle the algorithmic level, and neurolinguistic ones the implementational level. However, this clashes with usage-based construction grammarians' stated aims of characterising individual language users' mental representations since these are a matter for the algorithmic level.

Thus, claims of the cognitive nature of construction grammar often seem to conflate the computational and the algorithmic, or to confuse them with one another. The language is algorithmic, but the evidence points to computation or, more generally, to the social level that lies beyond individual minds.

Like much of the field, early work in usage-based construction grammar assumed, at least tacitly, an isomorphic relationship between mental grammars and the community grammar: the individual tokens that are exchanged between language users in interaction

[2] I will set aside the cognitive plausibility of certain assumptions of usage-based construction grammarians, especially the grammar–lexicon continuum (see Boye & Bastiaanse 2018; Divjak et al. 2022).

were taken to reflect their mental representations.[3] There are two main problems in equating community-level constructions with mental representations. Since the constructions that construction grammarians have postulated have largely been supported by usage data from the collective level, these problems point towards seeing construction grammar as primarily a theory of language in its social context.[4]

The first problem is individual differences. As has become increasingly well-known since Goldberg's definition was published, the same construction may have very different cognitive representations for different language users (Dąbrowska 2012). For example, the Polish genitive singular masculine has two main allomorphs (*-a* and *-u*) whose distribution is difficult to describe. Polish speakers represent their variation using very different rules: in an experiment with nonce words, subjects either used one suffix for the entire masculine gender, two suffixes based on animacy, or two suffixes based on more specific semantic criteria, or their answers displayed a more diffuse distribution of the two possible suffixes (Dąbrowska 2008; 2012: 221–224). On the basis of this, it looks like the mental representations that Polish speakers use to produce and process the genitive singular masculine look very different from one another. Such findings indicate that we cannot equate language users' cognitive representations with community-level conventions (see also Dąbrowska 2016: 486–488).

The second problem is the non-isomorphism of syntax and cognitive processes. One syntactic structure can be produced using more than one cognitive strategy. It has often been noted that while an utterance such as *I don't know* follows the rules of grammar exactly, it is also represented as an item in its own right by most if not all English speakers (Pawley & Syder 1983; Sinclair 1987; Bybee 1998). Indeed, such observations have been used to bolster the claim that knowledge of language is usage-based rather than strictly rule-based, and that cognitive representations of grammar can exist at several levels of abstraction. However, a corollary of this is that, for any given linguistic token, it is virtually impossible to know which representation was responsible for producing it. The representation may not even belong to just one brain, as in the case of co-constructed syntactic constructions. Finally, it is not clear what these representations are like. Because of these reasons, it is better not to equate the (collective) linguistic generalisations with the (cognitive) psycholinguistic representations used to produce them. This is not to deny that frequency effects exist: when a pattern begins to display idiosyncratic formal or functional behaviour, it naturally makes sense to posit it as a construction in its own right, as is the case of *I don't know*.

These two problems collectively show that current research practice in usage-based construction grammar is analytically imprecise, if it is concerned with individual cognitions. If, on the other hand, it concerns itself with modelling language as a social tool, it is rather more accurate. In order to sketch a social alternative for the definition of construction, we must turn to another aspect of mentalism in how constructions are sometimes conceptualised in constructional approaches to language.

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[3] Even though the difference is well-known among usage-based linguists by now, the conflation of the individual and the collective is a persistent problem in the construction grammar literature. For example, in an otherwise carefully argued paper, Leclercq and Morin (2023) vacillate between defining constructions as conventional (p. 4) and as entrenched (p. 7).

[4] For the sake of the argument, I will sidestep the issue of what mental representations actually are, an issue on which there is no consensus either among cognitive scientists in general (see Smortchkova et al. 2020) or construction grammarians in particular (the 'fat node problem': Hilpert 2021: 72; see also Hilpert 2018; Budts & Petré 2020).

4 Constructions as devices for construal

Another way in which Construction Grammar bills itself as cognitive or mentalist is in its conception of meaning. According to Goldberg, one of the tenets that define constructional approaches is that '[a]n emphasis is placed on subtle aspects of the way we *construe* the world' (Goldberg 2006: 9, emphasis added). The notion of construal can be understood in two ways: it can be a mental state or a semiotic choice in communication. The former of these senses has been adopted in some cognitive-linguistic work; Goldberg's formulation is not explicitly tied to either. I will argue that only the latter understanding is defensible as a theory of constructional meaning. Stopping at construal will be necessary when we move to the social definition of construction in Section 4.

The construal-based conception of meaning is not explicit in Goldberg's definition, but it is a corollary of it. Goldbergian argument structure constructions are hypothesised to 'encode as their central senses event types that are basic to human experience' (Goldberg 1995: 39). This echoes the experientialist view of meaning (Lakoff 1987: xiv–xv), which emphasises the embodied nature of many linguistic categories, and underlies much cognitivist and constructional research.

Many usage-based construction grammarians adopt some variety of cognitive linguistics as their theory of meaning. In cognitive linguistics, meaning is seen as conceptualisation (Langacker 1987: 5), and it is conceptualisation that is assumed to make cognitive linguistics really cognitive (Langacker 2008: 8). Langacker draws a rather direct parallel between the meaning of a linguistic expression and the cognitive, even neural, state of the language user who uses that expression (see Möttönen 2016: 84–107 for discussion).

On the cognitivist view, the meaning of a linguistic sign consists of content that is subject to some kind of construal (Langacker 2008: 43). Since constructional synonymy tends to be avoided, different constructions typically provide slightly different construals even when they can be used to describe the same scene (Goldberg 1995: 67). Consider (1):

(1) a. *Melissa painted the house.*
b. *Melissa painted the house pink, green and black.* (Boas 2003: 146)

Example (1)a provides a neutral description of the process. By contrast, example (1)b uses the English Resultative Construction to express a construal that emphasises the end result of the process: in this case, the particular colours of the house (Boas 2003: 146–147).[5]

Möttönen (2016) argues that the Cognitive Grammar notion of construal cannot be purely mental. According to him, meanings cannot be equated directly with mental states. Drawing on Itkonen (1997), Möttönen contends that meanings are social: linguistic signs are used to communicate with other language users in such a way that they can recognise the intentions of the sender to a useful degree. Different constructions do provide different ways of construing the same content, but these construals are intersubjective rather than individual. In other words, they are shared among language users.[6] Rather than express the language user's mental state directly, the construal expressed by a word or construction is something that the language user can deploy more or less strategically to further

[5] Boas uses the term 'perspective'. Langacker originally used the term 'image'/'imagery' (e.g. Langacker 1987: 39).

[6] This use of the term 'intersubjectivity' is rather different from the semantic-pragmatic notion that is used to label constructions that encode or imply a shared perspective between sender and addressee or an orientation to the addressee's perspective (e.g. Verhagen 2005; Traugott 2010).

their interactional needs (see also Croft 2009: 409–412). Constructions are used because they are mutually recognisable ways of exchanging meanings between language users.

Consider the English discourse particle *oh* as an example. In the conversation analysis literature, *oh* has been found to appear in a number of recurring linguistic contexts with slight formal and functional variations and family resemblances (e.g. Heritage 2005). As Fischer (2015) points out, this makes *oh* a good candidate for a constructional analysis. Examples (2) and (3) illustrate some recurring uses of *oh*:

(2) Heritage (2005: 192; cited in Fischer 2015: 571)
Shi: *.hh When do you get out. Christmas week or the week before Christmas.* (0.3)
Ger: *Uh:mm two or three days before Ch[ristmas,]*
→ Shi: *[O h : ,]*

(3) Heritage (2005: 192; cited in Fischer 2015: 571)
Jen: *Okay then I was asking and she says you're working tomorrow as well,*
Ivy: *Yes I'm supposed to be tomorrow yes,*
→ Jen: *Oh:::,*

If one were to equate meanings with individual-level cognition, *oh* in (2) and (3) would be analysed as a direct signal of a change in mental state. Both Heritage and Fischer discard this analysis. Rather, what seems to be happening is that the speakers are performing such a change of state for specific interactional ends, regardless of whether such a change is taking place or not (indeed, especially in (3), it seems clear that there is no such change). In Möttönen's terms, *oh* offers a construal of the preceding turn as having changed the speaker's epistemic state. The language user's actual mental state is not important; what matters is that they present it as a change using the convention of an *oh* utterance, therefore making this construal intersubjectively available and thus potentially interactionally salient.

5 Constructions as social conventions

To summarise the previous two sections, construction grammar has been argued to be a cognitive theory of language in two ways that are of interest for the present discussion: first, in suggesting that constructions are mental representations, and second, in equating constructional meaning with conceptualisation and construal. The first of these arguments is explicit in Goldberg's 2006 definition of construction, and the second is implicit in it, or at the very least not ruled out. Both arguments were shown to be problematic. Mental representations are idiosyncratic across individual language users and possibly usage events, and they do not seem to be organised into one-to-one mappings of form and function, so that one construction may correspond to several mental representations. Construal is not purely cognitive but intersubjective, a matter of shared conventions. Seen this way, constructional meaning may well be analysed in terms of construal.

Language users thus represent grammar in different ways, but they do so to communicate with one another following shared linguistic norms. Constructions exist because as shared conventions they facilitate the mutually manifest expression of meanings in interaction (Schmid 2020; Sperber & Wilson 1995). If we equated grammatical constructions with mental representations, we would say that different language users have slightly different constructions. I propose a different interpretation: the grammar of a language exists

as an entity in Popper's third world, and language users reproduce the conventions of that grammar using whatever cognitive means that they can. Grammatical constructions are ontologically distinct from the mental representations of individual language users. A similar view is expressed by Haspelmath, who proposes a definition of constructions 'as historically evolved semiotic systems' (Haspelmath 2023: 7). In this section, I will sketch some implications of such a view for construction grammar.

Recall Popper's claim that language exists on three ontological levels, or 'worlds': the physical, the mental and the social. Of these, Popper argues, the third world of social phenomena is the most important for language. According to Popper, the three worlds are independent but not completely isolated from one another. The first world can interact with the second world: mental states have physical manifestations in the brain, and physiological processes in the brain can affect our minds. Similarly, the second world can interact with the third world: language as public representations is produced and comprehended by the minds of language users, and those minds have come to have language as a result of social interactions with other language users. As noted in Section 1, we have augmented Popper's account with the view that collective entities, such as grammatical constructions, exist through the actions of individuals (Elder-Vass 2010; 2012). This is broadly in line with Schmid's entrenchment and conventionalisation model, which is highly consistent with construction grammar.

I am not the first one to suggest grounding (cognitive) linguistics in Popper's third world. Geeraerts (2016) reinterprets the 'cognitive' in cognitive linguistics both as a mental and as a social phenomenon. For him,

> [t]he "language as cognitive tool" interpretation of the label *Cognitive Linguistics*, then, is consonant with a "third world" interpretation if "language as cognition" encompasses shared and socially distributed knowledge and not just individual ideas and experiences. (Geeraerts 2016: 532–533)

Geeraerts advocates a cognitive linguistics that takes into account social and cultural factors that influence language use. In this conception, language is 'an intersubjective, historically and socially variable tool' that cannot be reduced to individual language users' cognitions even though it comes to exist through their actions (Geeraerts 2016: 537).

If language is seen as intersubjective, constructions are the vehicles by which this intersubjectivity is produced. This leads to a non-mentalist update to Goldberg's definition of construction: A CONSTRUCTION IS A CONVENTIONAL PAIRING OF (COMPLEX) FORM AND FUNCTION.[7] There are two differences with Goldberg's definition from 2006: (i) constructions are conventionalised rather than learned (or entrenched; cf. Schmid 2020), and (ii) frequency is not a definitional criterion for construction-hood.[8] On this view, constructions are devices for the intersubjective coordination of viewpoints. This kind of understanding is in fact expressed by Tomasello, who states that '[l]inguistic symbols are social conventions by means of which one individual attempts to share attention with another individual by directing the other's attentional or mental state to something in the outside world' (Tomasello 2003: 8). This definition of linguistic conventions, which we may

[7] Goldberg does sometimes use the notions of convention and conventionalisation when defining construction (e.g. 2006: 3). However, it is not clear if this is due to a principled distinction between conventionalisation and entrenchment (cf. Schmid 2020), or if community grammars and mental representations are assumed to be basically isomorphic.

[8] In addition, like Diessel (2019), I find it most useful to restrict the notion of construction to internally complex signs. Thus, words are not constructions. Further restrictions are proposed by Haspelmath (2023).

equate with words and grammatical constructions, accords well with the view advocated in this paper: the conventions are defined in terms of their social rather than cognitive function, and the construal that they express is likewise social and intersubjective rather than mental.

By adopting this definition, we construe the relationship between syntax and its cognitive representation as a contingent one. Thus, it is an empirical question what kinds of mental schemata or operations a given language user employs to produce and understand tokens of a given construction. Constructions are not something that language users 'have'; they are something that they do.

6 An example

Let us consider an example to see the practical implications of the view advocated in this paper. English has a number of restrictive (or exclusive) adverbs, such as *only*, *just*, *simply* and *merely*, which also appear with varying frequencies in a contrastive negation construction such as *not X but Y* (see Silvennoinen 2017):

(4) *not* RESTR *X but Y*
Lee speaks ***not only/just/merely/simply French but also Japanese****.*

Among the four variants of negated restrictives, *not only* stands out as the most frequent as well as the most idiosyncratic both formally and functionally (see Silvennoinen, In press). Formally, it is commonly used with inversion or as a compound modifier to a verb phrase, as in (5)–(6), which the other variants almost never do (examples from the British National Corpus, 1994 version). Functionally, the expression in the focus of *not only* is interpreted affirmatively (e.g. in (6), a top quality product really is ensured), while the other variants prevaricate between affirmative and negative readings. It is thus a strong candidate for a separate construction.

(5) ***Not only*** *would a list of varieties make a book like this out of date in a short time, it would not help you either.* (BNC)
(6) *Our continued investment in production facilities* ***not only*** *ensures a top quality product but sets the standard for state of the art operations.* (BNC)

By contrast, the other common variants of negated restrictive (*not just/simply/merely*) are less straight-forward. *Not merely* in particular is problematic under a frequency threshold view of constructions: it does appear relatively often with the *not X but Y* construction but this pattern in not commoner in a statistically significant way compared to the other negated restrictives. There are two interpretations of the constructional interaction that underlies the pattern *not merely X but Y*: *not merely X but Y* could be seen as a construction node in its own right (the item-based interpretation, see Figure 1), or it could be seen as the unification of *merely* with a schematic *not* RESTR *X but Y* construction (the unification view, see Figure 2). (In the figures, a box with a continuous border indicates a conventionalised construction and a box with a dotted border a pattern that does not have the status of a conventionalised construction in its own right; a continuous line indicates an instance link that is needed to license a construct, a dotted line an instance link that is not needed to license a construct but merely motivates another construction or its subpart.)

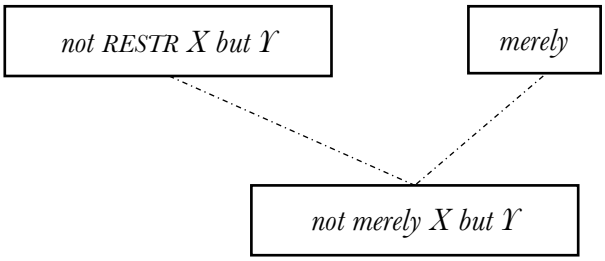

Figure 1. Partial construction network for not merely X but Y*: the item-based view*

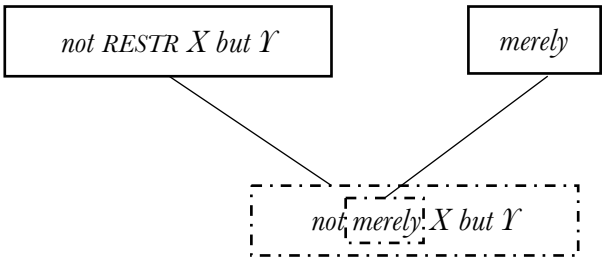

Figure 2. Partial construction network for not merely X but Y*: the unification view*

On a simple frequency threshold view of grammatical constructions, there would not be a principled way to decide between these interpretations: the pattern is recurrent but not recurrent enough to suggest a collostructional relationship between *merely* and *not X but Y*, but it is not rare enough to conclusively rule such a relationship out, either (and it is not even clear what ruling it out would mean). By contrast, on a traditional idiosyncrasy-based definition of construction, the unification view would clearly be preferable: no collocational idiosyncrasy can be proven, so a separate node is not warranted in the construct-i-con (Hilpert 2014: 20–22). It would be an empirical question whether speakers of English have stored *not merely X but Y* as a separate construction, and the results would in all likelihood be highly variable, which casts doubt on the usefulness of any inferences drawn about the 'average' individual language user's cognition. Despite the difficulties of making any firm cognitive claims, I would argue that the interaction of *merely* with negation is a worthy subject for a constructional analysis. What this analysis suggests is that English has the *merely* construction and the *not RESTR X but Y* construction, which both exist as socially shared conventions. These conventions can unify to create a construct like *not merely X but Y*, but such cases do not have special properties that would warrant positing this pattern as a separate social convention – or construction – of English.

7 Conclusion

In this paper, I have tried to show that constructions should be defined as social rather than definitionally mental entities. I have also strived to demonstrate that this is not merely a terminological exercise but has practical consequences for the way in which constructional analyses are conducted. In particular, I caution against calling the patterns inferred from frequency data constructions unless there are other pressing reasons to do so, such as idiosyncrasy or being an attractor for collocational phenomena (see Hilpert 2014: 14–22).

My answer to the question posed in the title of this paper is a cautious *yes*: construction grammar is cognitive, if we remember that cognition can be studied at several different levels, not all of which make claims about individual minds or brains. Furthermore,

describing the interactive, contextual use of language is certainly of inherent interest to cognitive science (see Dingemanse et al. 2023).

My argument is set against the backdrop of the social strand in cognitive linguistics (e.g. Croft 2009; Geeraerts 2016; Harder 2010). I argue that corpus-based construction grammarians can content themselves with describing language as a social phenomenon; argumentative leaps to mental representations should be treated with caution. For decades, linguistic theory has, sometimes tacitly and sometimes not, prioritised the cognitive at the expense of the social (e.g. Dąbrowska 2016: 485–486), for instance by downplaying the significance of sociolinguistics for linguistic theorising. An example of this is the undertheorising of social meaning in construction grammar (see Leclercq & Morin 2023). Such an approach ignores the fact that patterns of language use are important aspects of our social lives. There is intrinsic value in studying them, but this value is not increased when researchers draw inferences about cognition that have dubious scientific justification. As a corpus linguist, I have sometimes been guilty of such inferences myself (e.g. Silvennoinen 2018).

The views that I have presented in this paper may make some cognitive and usage-based construction grammarians uneasy. If being learned is no longer part of the definition of construction, does that mean that the cognitive relevance of construction grammar is questioned? This is not my intention. Furthermore, I do not intend to downplay the importance of studying individual cognitions. On the contrary, studying how minds produce constructions is a valuable and important enterprise. Similarly, I do not preclude the study of usage frequencies, either in their right or in the testing of hypotheses about frequency effects, whether in individual language users' linguistic representations or in collective-level generalisations.

The approach advocated here has the advantage of unifying usage-based construction grammar as a theory. Many psycholinguistic studies that adopt a constructional approach already define constructions (or 'linguistic conventions'; Tomasello 2003) as social entities. Similarly, many corpus-based studies in usage-based construction grammar stay on the computational level in their cognitive claims, if indeed they make any. They characterise the cognitive task of using a given construction in general terms and do not attempt to model the minds of individual language users, or they may remain entirely agnostic about the cognitive reality of their claims (see Hilpert 2018 for discussion). As Hilpert suggests, 'it would probably be useful if researchers with a commitment to investigating cognition were to state this goal explicitly' (2018: 25). Hilpert is writing about diachronic studies in construction grammar, but his point applies more widely. For those who do choose to make claims about individual minds, this higher cognitive ambition should ideally be accompanied by a higher threshold of evidence. In the past 35 years, construction grammar, especially its Goldbergian, usage-based tradition, has proven to be an insightful and inspiring framework for research. I hope that in the next 35 years of construction grammar, the approach will further consolidate its theoretical self-understanding, with usage-based construction grammarians becoming more aware of just what is needed to claim something about the social and cognitive realities of producing and comprehending grammatical constructions.

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