TITLE: Linguistic typology in construction grammar terms

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Abstract

Linguistic typology is an approach to grammar that infers universals of language inductively by comparison of large numbers of languages of different geographical areas and families, based largely on grammatical descriptions by field linguists and other individual language specialists. Linguistic typology, and the descriptive linguistics that it is based on, share a number of basic tenets with construction grammar, another approach to grammar that represents grammatical structures as pairings of form and function of varying degrees of specificity or generality. These similarities include an equal focus on form and function, a basis in language use, and an inductive approach to generalizations about the nature of language and languages.

Keywords

typology, construction grammar, construction, usage-based model, grammar writing

Key points

• Linguistic typology, more specifically morphosyntactic typology, can be cast in construction grammar terms
• Morphosyntactic typology and construction grammar treat the pairing of form and function as the basic unit of analysis
• Morphosyntactic typology and construction grammar treat complex structures as wholes
• Variation in form and meaning are central to both morphosyntactic typology and construction grammar
• Many best practices in contemporary grammar writing implicitly treat morphosyntactic structure as consisting of symbolic constructions

Glossary: (optional)

Nomenclature: (optional)

Introduction

Construction grammar is a model of the representation of grammatical knowledge that emerged as a distinct theory in the late twentieth century. Construction grammar represents grammatical constructions as pairings of form and meaning (or function), and generally draws its data from language corpora. Typology is an approach to finding language universals that emerged as a distinct theory in the mid-twentieth century. Typology operates by comparing a large sample of languages from different families and geographical areas, based on grammatical descriptions of those languages by field linguists or specialists in particular languages, and finds language universals inductively over the cross-linguistic data. Construction grammar and typology are not generally considered together—most construction grammarians work on a single language, and most typologists (and descriptive linguists) do not consider themselves to be construction grammarians, and think of their analyses as "framework-free". Nevertheless, there are many commonalities between the two, especially if one considers not only typological analysis but also descriptive grammatical practice upon which typological analysis is ultimately based.

Body:

Basic principles of construction grammar

Construction grammar is a contemporary recasting of the traditional concept of a grammatical construction, and its generalization to the analysis of all grammatical structures. It draws on two basic principles that are at least inspired by the traditional concept of a construction.

First, all basic grammatical units are pairings of form and function, that is, they are linguistic signs in the Saussurean sense (Saussure 1916), or symbolic units (Langacker 1987). Form includes not just morpheme or word types, but also phonological structure, such as prosody or even phonological form (for example, the English negative clitic *-n't*). Function includes not just meaning in a truth-conditional sense, but also conceptualization (construal), information packaging (such as modification vs. predication), pragmatic properties (such as assertion vs. presupposition, as well as deixis, information status and so on), and social properties (register, honorific, taboo, and social group identity). This principle contrasts with the basic assumption of generative grammar, another linguistic theory, that different types of grammatical information, such as phonology, syntax, semantics and pragmatics, should primarily be encapsulated in separate modules, with general mapping or interface rules linking them together.

Second, even complex morphosyntactic structures are signs/symbolic units, that is, are holistically conceived as independent units in grammatical representation. This principle starts from the traditional grammar view of a construction, such as the Latin Ablative Absolute construction, as a complex unit consisting of a particular configuration of parts and associated with a particular meaning. Contemporary construction grammar extends this traditional prototype to all grammatical units. Simple as well as complex units are constructions, hence individual words or morphemes are constructions. And constructions and their parts vary in schematicity. This latter point is true of traditional constructions: the English Comparative construction, [X *is* Adj-*er than*

Y], consists of both abstract categories abbreviated here as X, Y and Adj, and substantive morphemes and words such as *-er*, be and *than* (more precisely, *-er* stands for comparative adjective forms ranging from the periphrastic *more intelligent* to the suppletive *better*, and *be* stands for all forms of that verb). A construction may consist entirely of abstract categories, such as the English Resultative construction [Sbj Verb Obj Adj], as in *They painted the bathroom yellow.* In other words, every grammatical unit is a construction: a form-function pairing that is complex or simple, with parts that are either schematic or substantive. This principle contrasts with another basic assumption of generative grammar, that any complex unit is derived from atomic units (built out of individual words or morphemes), and the combination of such units is determined by the interaction of multiple independent rules.

The focus on specialized as well as general constructions and the particulars of their form and function converges with usage-based approaches to grammatical analysis. Usage-based approaches draw on corpora of actual language use and describe all types of constructions (in the general sense), from very specific narrowly-defined structures to highly general patterns, such as the English Subject-Predicate construction supercategory. Although the usage-based approach is not a universal principle of construction grammar, it has been adopted by many construction grammar theories, including Embodied Construction Grammar, Fluid Construction Grammar and Radical Construction Grammar. Some usage-based linguists extend the usage-based approach to emphasize the importance of specific tokens of utterances (exemplar theory).

A usage-based construction grammar analysis of a language naturally leads to a very large inventory of constructions. The last basic principle of construction grammar is that this inventory of constructions is structured, typically as a network of constructions linked by different types of relations (Diessel 2019). For example, the English idiom *X pull strings* in *She pulled strings (to get him a ticket to the concert)* is a **subtype** of the more general Transitive construction [Sbj Verb Obj]. Alternatively, the English Subject Noun Phrase construction is a **part** of the Transitive construction: *She/His boss/Martine/*etc. *pulled strings…* Subtype and part-whole relations are two of several types of relations that have been proposed to structure the inventory of constructions of a language, also called a **constructicon**.

The typological approach to grammar, and its interpretation in construction grammar terms

Typological analysis, or functional-typological theory as it is sometimes called, is not generally considered to be a construction grammar theory. Nevertheless, there are important elements that typological analysis has in common with construction grammar. Conversely, Radical Construction Grammar is a construction grammar theory that incorporates the results of cross-linguistic comparison in typology into its model of grammatical structure. Here we focus on how typological analysis can be understood in construction grammar terms.

Typological analysis seeks to compare the structures of different languages, in order to analyze similarities and differences between languages, find more general patterns of variation (typological universals), and develop explanations for those patterns. These constitute the three steps of typological analysis: typological classification, typological generalization (language universals), and (functional-)typological explanation (Stassen 1985; Croft 2003).

The first step, typological classification, requires a valid basis for the cross-linguistic comparison of the grammars of languages from different language families and different geographical regions. This is in fact a complex issue, for two reasons. First, the structure of languages is extremely diverse, especially if one draws a large sample for one's analysis from

different families from every continent. Second, grammatical structures of individual languages are defined by their relation to other structures in the same language, as with modifier indexation (agreement), illustrated in Table 1.

TABLE 1 AROUND HERE

Modifier indexation/agreement is the expression of certain inflectional categories on modifiers that usually are identical to the categories of the noun modified (hence the modifier 'agrees with' the noun). But in different languages, different inflectional categories occur, and the inflectional categories are found on different classes of modifiers. In fact, Table 1 oversimplifies the facts, in that not all inflectional categories are found with all members of the modifier classes, and some words outside these modifier classes also take (at least some of) the inflectional categories. In other words, the grammatical structures of individual languages are language-specific and hence incommensurable with their seeming equivalents in other languages. Therefore one must search elsewhere for cross-linguistically valid categories for comparing languages (Croft 2001; Haspelmath 2010).

From the beginning of typology, the generally accepted basis for cross-linguistic comparison has been function (Greenberg 1966; Keenan and Comrie 1977; Stassen 1985; Croft 2003). For example, Stassen's (1985) typological classification of comparative constructions starts from a semantic definition: (i) the comparee (a referent) has a property to X degree; (ii) the standard (another referent) has the same property to Y degree; (iii) X exceeds Y. Hence a typology of comparative constructions begins by identifying constructions across languages that fulfill this function. One consequence of this method is that from the beginning of analysis, typology is examining constructions in the construction grammar sense: a pairing of form and function. As a cross-linguistic category, an 'X construction', e.g. a comparative construction, is a set of constructions characterized by their function (Croft 2022).

The functional basis of typological comparison is really a prerequisite for typological classification. Once a set of constructions with the same function is identified across languages, their form is compared. Again, comparison of form must have a cross-linguistically valid basis. There are few basic properties of morphosyntactic structure that can be used to classify constructions across languages. One is word order: for example, the English Adjective Modification construction has the adjective precede the noun, while the most basic Spanish Adjective Modification construction has the adjective follow the noun. For this comparison to be valid, 'adjective' and 'noun' are defined semantically, as property concept and object concept respectively.

Another such property is the number of morphemes encoding the function of the construction. For example, the English Genitive construction (*Henry's bicycle*) has **overt coding** of the possessive relation with the clitic *-'s*, while the Kobon Genitive construction (*Dunab ram* 'Dumnab's house') does not overtly code the relation; it has **zero coding** of possession. Again, function is necessary to define this property of form: the function is either zero coded or overtly coded. The same is true of other cross-linguistically valid formal properties of constructions. Typologists call the cross-linguistic category of a construction expressed with specific formal properties a **strategy**, for example the AN (adjective precedes noun) word order strategy (Keenan and Comrie 1977; Stassen 1985; Croft 2022).

In sum, both constructions and strategies in typology are form-function pairings. Typologists define cross-linguistic categories of constructions by their specific function and strategies by both their specific function and their specific form.

The second step in typological analysis is the formulation of typological generalizations, also called universals. Typological generalizations come in a wide variety of patterns. One can say very broadly that typological generalizations relate different strategies that are used in more than one construction. For example, consider a word order universal such as Greenberg's Universal 18: 'When the descriptive adjective precedes the noun, the demonstrative and numeral, with overwhelmingly more than chance frequency, do likewise' (Greenberg 1966:86). A confirming instance of this universal is found in the English Adjective, Demonstrative and Numeral constructions: all three precede the noun (*these three old books*). Greenberg's universal relates the word order strategies of three different constructions. Strategies, as described above, are also constructions (form-function pairings), but with cross-linguistically valid properties of form specified. More generally: typological generalizations are basically generalizations about constructions in the construction grammar sense.

The third step in typological analysis is offering explanations for typological generalizations. Typological explanations can be divided into three broad categories. Explanations in the first category are based on the function of a construction as a form-function pairing. For example, the overwhelming frequency of subject before object in basic clause word order is explained in terms of an iconic relation between word (or phrase) order and degree of topicality (e.g. Tomlin 1986). This type of explanation is clearly constructional, since it involves the pairing of form and function.

Explanations in the second category are based on language use, including language processing. For example, the distribution of zero vs. overt coding in constructions is often explained in terms of token frequency in language use (Bybee 1985, 2010; Haspelmath 2021); and word order universals are explained in terms of ease of parsing (Hawkins 1994, 2004, 2014). Token frequency is an important property of the usage-based model.

Explanations in the third category are based on language change, such as patterns of recruiting the strategy of one construction as the strategy for a closely related construction, often but not always a unidirectional process. For example, motion verb constructions are often recruited to express future time reference as a future auxiliary, as in *It's going to snow tomorrow* (e.g. Bybee, Perkins and Pagliuca 1994). A large class of language changes found systematically across languages are examples of **grammaticalization**. Grammaticalization was originally formulated as the evolution of words into grammatical morphemes (e.g. Heine, Claudi and Hünnemeyer 1991:2). More recently, however, under the influence of construction grammar, grammaticalization has been argued to be the evolution of constructions, not individual words (Hopper and Traugott 1993:156). A word such as English *go* only grammaticalizes to future tense in the English Progressive construction (*be going to*). Traugott and Trousdale (2013) argue that grammaticalization is a subtype of the more general process of **constructionalization**.

Language description, typology and construction grammar

Linguistic typology is only possible thanks to documentation and description of the diversity of human languages, especially indigenous languages which are usually unwritten, spoken in small communities, and often endangered. Typology requires a large sample of languages, far larger than the number of languages that a typologist might know personally, hence its results are dependent on the quality of descriptions of indigenous languages. Language descriptions in turn have

benefited from advances in linguistic typology, that is, the understanding of the range of variation in structure of the world's languages. Several best practices in language description – practices which also make descriptions maximally useful to other linguists, including typologists – can also be interpreted through a construction grammar lens.

Common desiderata of "good grammars" (Rice 2006:390) include completeness, attention to variation, and attention to both form and meaning. While true "completeness" is an unrealistic goal in language description, ideally a grammar goes beyond the maximally regular and schematic morphosyntactic patterns of a language. For instance, in addition to the regular morphosyntax of existential constructions in Kukama, Vallejos (2010:450-5) describes various idiosyncratic behaviors of the existential predicate *emete*, including its emerging use in specific configurations that can be interpreted as possessive. This description highlights the close relationship between constructions expressing existence, possession, and location, facilitating typological interpretation (see e.g. *adnominal possessives* and *locational possessives;* Stassen 2009). Such an investigation of idiosyncratic formal structures at least implicitly follows theoretical principles of construction grammar, and aligns with classic constructional analyses of idiosyncratic constructions in English.

Secondly, attention to variation is often necessary in order to present a realistic image of the structure of a language – especially since many languages being described are facing at least some degree of endangerment. Skilton (2017) and Nagy (2017), amongst others, have made a strong case for including sociolinguistic variation in language description. The former, for instance, presents a description of dialect contact in a Máíhɨ̃ki community, showing how the dialectal composition of the communities of practice to which speakers belonged in early life leave their traces in adult language use. Such a focus is naturally accommodated in the usage-based tradition to which construction grammar has close conceptual ties. Most construction grammar frameworks conceive of constructions as being learned through exposure, and emerging from experience with specific usage events. Consequently, syntactic knowledge is conceptualized as inherently dynamic and subject to changes in the linguistic input experienced by a speaker, leading to the types of community-internal variability described by Skilton (see also Van Gysel 2024 for case studies on such variability in Sanapaná). Description of variation, and the changes it often prefigures, feeds specifically into the third objective of typology – explaining language universals and the diachronic processes that underlie them.

Thirdly, joint attention to form and function is an inherent tenet of any iteration of construction grammar. Many grammatical descriptions of individual languages largely follow a "form-first" structural organization with, for instance, chapters organized around parts of speech identified in the language on distributional grounds. They nevertheless tend to discuss semantic and pragmatic function on equal footing with formal organization rather than treating morphosyntax as an isolated level of analysis. For example, while Tallman's (2018) chapter on associated motion in Chácobo has a first level of subdivisions dedicated to particular individual formal units (clitics), each such section contains subsections detailing the functional extension of these forms, including pragmatic uses (backgrounding), aspectual implications, and metaphorical extensions of particular clitics. Hence, these formal units are implicitly treated as symbolic units – constructions in the construction grammar sense.

Grammar writers often aim to let their language of study "tell its story" – to do justice to its particular grammatical organization and conceptual logic, rather than a priori imposing theoretical constructs on the language which may derive from the theoretical study of other languages (Gil 2001, Rice 2006). They often do so by adopting a "framework-free" or "atheoretical" approach to language description (see e.g. Haspelmath's grammar of Lezgian, 1993:8): not committing oneself

to one contemporary theory of grammar. Instead, they rely on principled application of the distributional method – the long-established gold standard of argumentation in syntactic description. Taken to its logical conclusion, this reliance on the distributional method also finds a logical home within the construction grammar family of frameworks. In Radical Construction Grammar in particular, not even traditional grammatical categories (e.g. verb, noun, adjective) and syntactic relations (e.g. subject and object) are taken as theoretical primitives (Croft 2001): such categories and relations are conceptualized exclusively as emerging from the complex constructions of a language and the roles they define for lower-level parts (construction elements or CEs; Fillmore et al. 2012).

A description of a language without assuming universal syntactic categories or relations (i.e. presenting the language maximally on its own terms) can be undertaken particularly fruitfully in a functional organizational framework (Tables 2-4, see Croft 2022). By starting from communicative functions such as the propositional act functions of reference, modification, and predication (Searle 1969) and describing the formal structures used to fulfill them, one can account for all the structures typically sought after in a reference grammar – phrase structure (Table 2), clause structure (Table 3), and complex sentence structure (Table 4) – without positing syntactic machinery not motivated by the language in question.

TABLE 2 AROUND HERE

TABLE 3 AROUND HERE

TABLE 4 AROUND HERE

The subtype, part-whole, and other relations that hold between constructions in such a constructional network of a particular language are different from the typological generalizations describing relations between constructions such as those between the different modifier constructions described above. However, they are compatible with them; and making the constructional interpretation of language-specific morphosyntax explicit allows a grammatical description to be directly accessible for typological comparison.

Conclusion

There are fundamental similarities between construction grammar theory (particularly Radical Construction Grammar), typological method and theory, and language description. In all three, the basic grammatical units are a pairing of form and meaning. The basic method includes careful description of both common and general language structures, and rarer and more idiosyncratic structures. The empirical base for analyses is language use, documented in corpora, and language descriptions, also based on corpora of use. Finally, function of constructions is described in as much detail as their form (and, of course, the mapping between the two).

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Language	**Example**	**Indexical categories**	**Syntactic category**
English	**that** book/**those** books	Number	Dem
Kambaata (Treis 2008:257)	qeráa'rr-**ut** maránch-at long-**F.NOM** walk-F.NOM 'the long walk'	Case, Sex Gender	Dem, Num, Adj
Kalkatungu (Blake 1977:4)	macumpa-aṉa japacara-**aṉa** caa-tikaja-**aṉa** roo-DAT lively-**DAT** these-DU-**DAT** 'to these two lively kangaroos'	Case	Dem, Num, Adj
Khasi (Rabel 1961:130)	ʔaar **tllii** kii khnaay two **CLF.HUM** PL mouse 'two mice'	Class	Num
Kifuliiru (Van Otterloo 2011:84)	í-**í**-hánó lí-bí AU-**CL5**-advice CL5-bad 'bad advice'	Number, Class	all modifiers
Nganasan (Wagner-Nagy 2019:314)	**nakürə** əlɨga-**ʔku** kəda-ʔku three.**ACC** small-DIM.**ACC** sledge-DIM.ACC '[I have seen] three small sledges'	Number, Case (some)	Dem, Num, Adj
Spanish	dos libro-s roj-o-**s** two book(M)-PL red-**M-PL** 'two red books'	Number, Sex Gender	Art, Dem, Adj, Poss
Russian (Semeonoff 1962:50)	xoroš-**aja** pogoda good-**F.SG.NOM** weather(F.SG.NOM) 'good weather'	Number, Sex Gender, Case	Dem, Adj, Poss, (others)

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Table 1. Different classes of modifiers defined by different indexical (agreement) categories in different languages.

Reference and Referent Expressions §3	
Reference and referents: §3.1	***Information status:***
Semantics of reference §3.1.1	Pronouns and articles §3.2
Semantic categories of objects §3.1.2	Identity known to speaker and hearer §3.3
Combined means of reference §3.1.3	Real referents, but unknown identity §3.4
Major ontological categories §3.1.3	Nonreal referents: indefinite pronouns/articles §3.5
	Generic reference §3.6
Modification §4	
Property concepts and scalar admodifiers: sorting referents into (sub)types §4.1.2	
Numerals, quantifiers, and set-member modifiers: selecting a referent §4.1.3	Mensural and quantifying constructions §5.2.2
Nominal modification constructions: situating a referent §4.1.4	Anchoring and non-anchoring nominal modification constructions, inalienability and the modification-reference continuum §5.2.1, §5.2.3-4
Anaphoric-head constructions §5.4	

Table 2. Argument phrase constructions: reference and modification. Section numbers in the table refer to the section in Croft (2022) that describes the functions of the constructions.

Event Structure and Argument Coding: Semantics, Transitivity and Alignment §6	**Event Structure and Nonprototypical Argument Coding §7**
The transitive construction and the prototypical bivalent event §6.2	Reflexives/reciprocals/middles: between monovalent and bivalent events §7.2
The intransitive construction and monovalent events §6.3	Motion events and the Talmy typology §7.3.1
	Contact and material verbs: manner vs. result verbs §7.3.2
	Other less prototypical bivalent events §7.3.3
	Experiential events: perception, cognition, emotion, sensation—and also ingestion §7.4
	The ditransitive construction: trivalent events, and possession §7.5

Argument Coding and Voice: Discourse Factors §8	**Argument Coding and Voice: Salience of Peripheral Participants §9**
Passive-inverse constructions: constructions for more salient Ps §8.3	Causative constructions §9.2
Antipassive constructions: constructions for less salient Ps (including noun incorporation) §8.4	Applicative constructions §9.3

Nonprototypical Predication and Nonpredicational Clauses §10	
Object predication and property predication §10.3	Locative and possessive clausal constructions: predicational and presentational §10.4

Information Packaging in Clauses §11	**Speech Act Constructions §12**
	Negation of declaratives §12.2
Topic-comment constructions §11.2	Imperative-hortative constructions §12.4
Nonparticipant (hanging) topic phrases §11.2.3	Person, politeness, and prohibitives §12.4.1
	Deontic modality, predication and their relation to imperative-hortative constructions §12.4.2
Identificational constructions §11.4	Interrogative constructions §12.3
Situation types related to identification §11.4.1	Functional types of questions and responses §12.3.1
	Epistemic modality, identificational constructions, and their relation to interrogative constructions §12.3.4
Thetic constructions §11.3	Exclamative constructions §12.5
Situation types related to theticity §11.3.1 Weather constructions as thetics §11.3.2	Mirativity, thetic constructions and their relation to exclamative constructions §12.5.2

Eventive Complex Predicates and Related Constructions §13	**Stative Complex Predicates, including Manner §14**
Eventive complex predicate constructions §13.2	Stative complex predicates: resultative, depictive, manner §14.1
Grammaticalization and lexicalization of eventive complex predicates §13.3	Complementative and appositive modification constructions, and the modification-predication continuum §14.3
Grammaticalization: argument structure constructions and voice §13.3.1	Phonomimes, phenomines and psychomimes, and 'manner' revisited §14.4
Lexicalization of eventive complex predicates §13.3.2	Motion events as complex predicates: the Talmy typology revisited §14.5
Grammaticalization of TAMP: auxiliary constructions §13.4	

Table 3. Clausal constructions: predication and arguments. Section numbers in the table refer to the section in Croft (2022) that describes the functions of the constructions.

Temporal and Causal Relations Between Events: Coordinate and Adverbial Clause Constructions §15	**Reference-tracking in Coordinate and Adverbial Clause Constructions §16**
Coordinate clause constructions and coordination in general §15.2	Reference-tracking systems §16.1-4
Adverbial clause constructions §15.3	Zero expression of arguments and the predicate in coordinate constructions §16.5
Other Semantic Relations Between Events §17	
The comparative construction §17.2.1	
Equative constructions §17.2.2	
Conditional constructions §17.3.1	
Concessive constructions §17.3.2	
Concessive conditional constructions §17.3.3	
Comparative conditionals §17.4.1	
Events as Arguments: Complement Clause Constructions §18	
Semantic types of complement clause constructions §18.2	Argument structure in complement clause constructions §18.4.1
	Reference tracking in complement clause constructions §18.4.2
Events as Modifiers: Relative Clause Constructions §19	
Relative clause constructions §19.1	The semantic role(s) of the shared participant in relative clause constructions §19.3
Noun-modifying clause constructions §19.2.4	
Anaphoric-head relative clauses §19.4	

Table 4. Complex sentence constructions: discourse coherence and event relations. Section numbers in the table refer to the section in Croft (2022) that describes the functions of the constructions.