Construction grammar

Outline

- What is CxG
- The grammatical construction
- The lexicon-syntax continuum
- The structure of grammar

Construction grammar

What is CxG

- **Construction grammar** (e.g. Filmore et al. 1988, Goldberg 1995, Croft 2001), or CxG, is a family of theories within the CL framework in which the **grammatical construction** is the central unit of grammar.

- The basic tenet is that constructions are **symbolic**, or semiotic, units that combine form and meaning/content.

- Consequently, the notion of **syntactic rule** is **rejected** in CxG.

Construction grammar

What is CxG

- Construction grammar was originally developed in the 1980s as a reaction against generative grammar (Croft & Cruse 2004: 225):
  - Being an isolationist and atomist approach to syntax, generative grammar ignored semantics and pragmatics.
  - Generative grammar also made a sharp distinctions between syntax and the lexicon.
  - Idiomatic constructions were ignored in generative grammar.
  - Non-central, irregular, and idiosyncratic constructions were also ignored.

Construction grammar

What is CxG

- The stratification of language in generative grammar and other isolationist models.

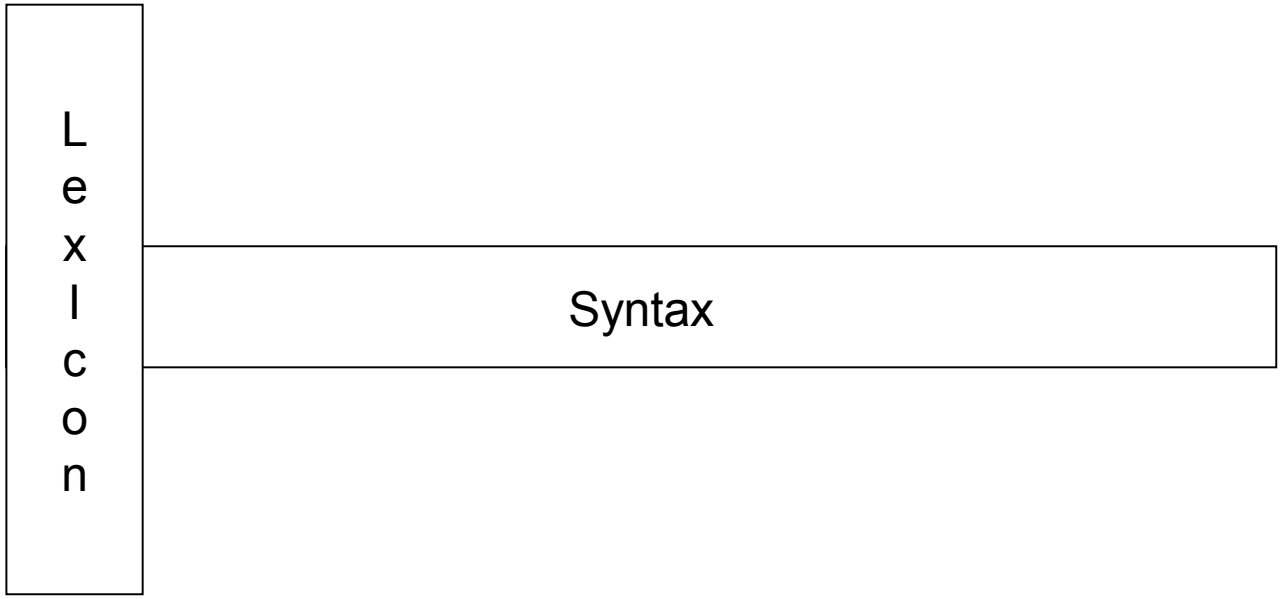
Lexicon

The **lexicon** contains the **lexemes** of a language, which are the atomic units that are combined into meaningful strings of words.

Construction grammar

What is CxG

- The stratification of language in generative grammar and other isolationist models.



The **syntactic component** provides the **rules** that combine lexemes **grammatically correct linear structures**.

Construction grammar

What is CxG

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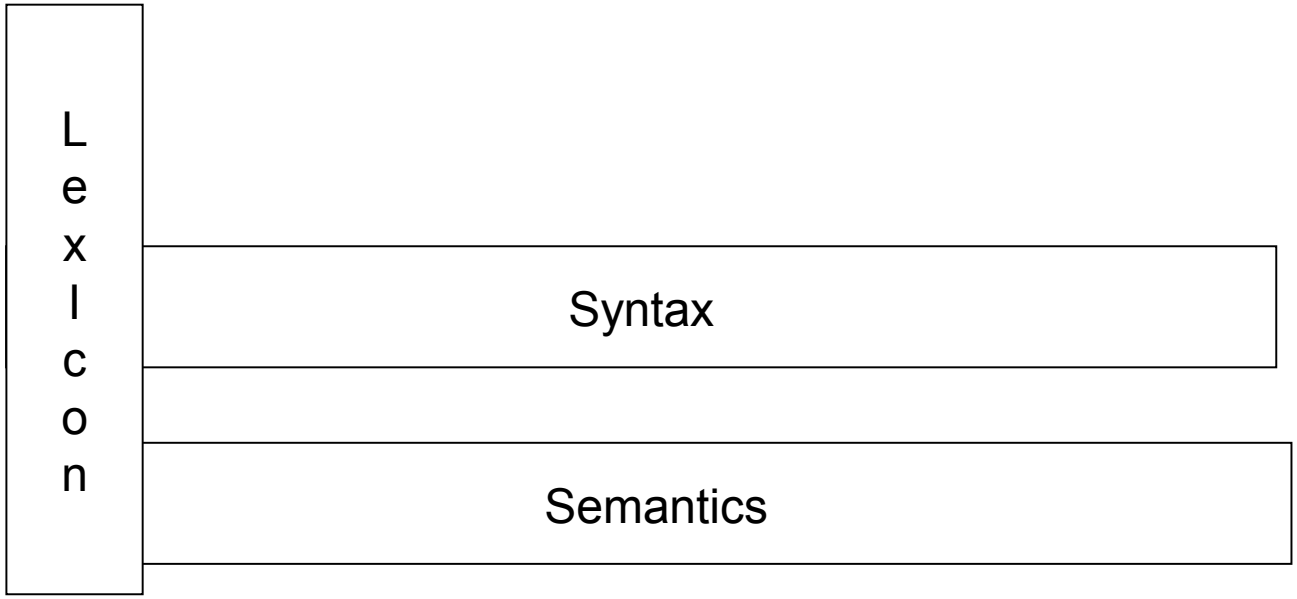

The **semantic component** provides the **rules** that combine **lexical meanings** Into **meaning complexes**.

Construction grammar

What is CxG

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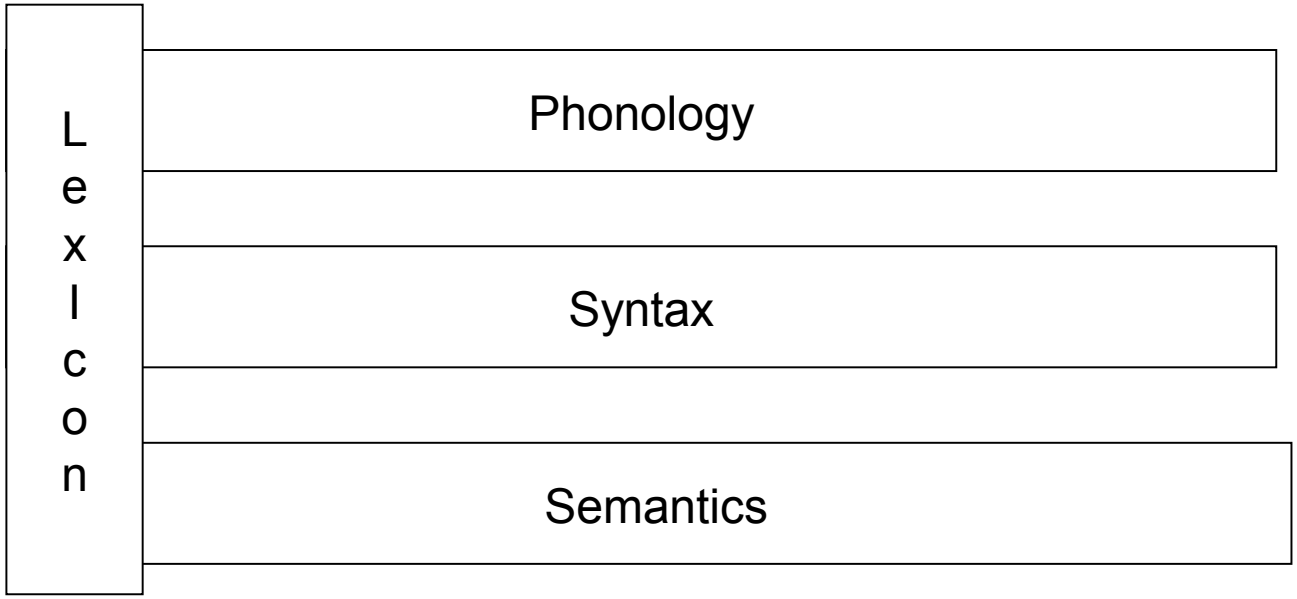

The **phonological component** provides the **rules** that combine **phonemes** Into **phonologically correct linear structures**.

Construction grammar

What is CxG

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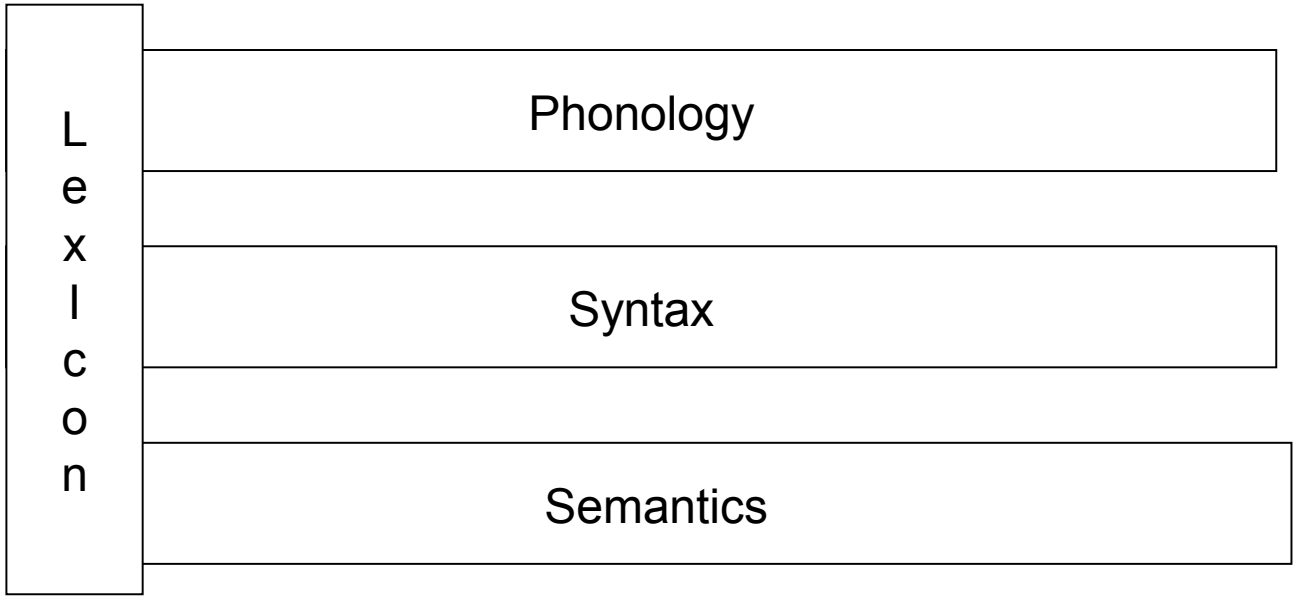
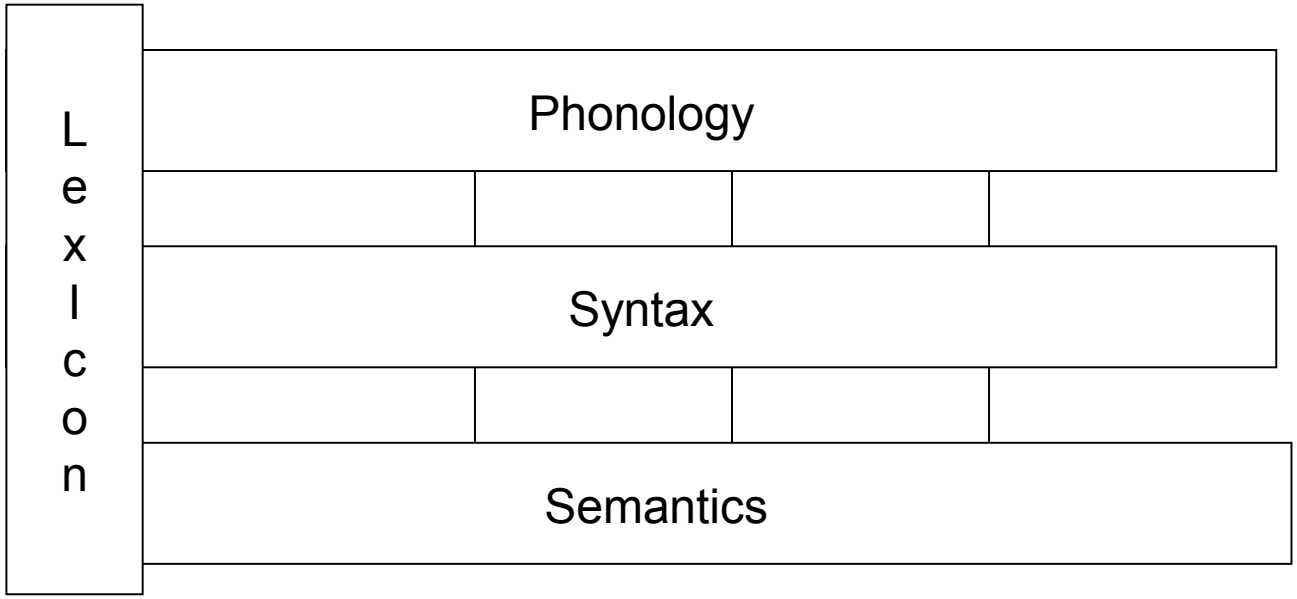


Since we have three separate components, each with its own set of rules, we need **linking rules** to set up correspondences between the components.

Construction grammar

What is CxG

- The stratification of language in generative grammar and other isolationist models.



Some examples of linking rules are Chomsky's (1981: 6) **θ-criterion** and Bresnan's (2001: 311) **biuniqueness constraint**. Both link syntactic arguments with semantic arguments.

Construction grammar

What is CxG

- The stratification of language in generative grammar and other isolationist models.

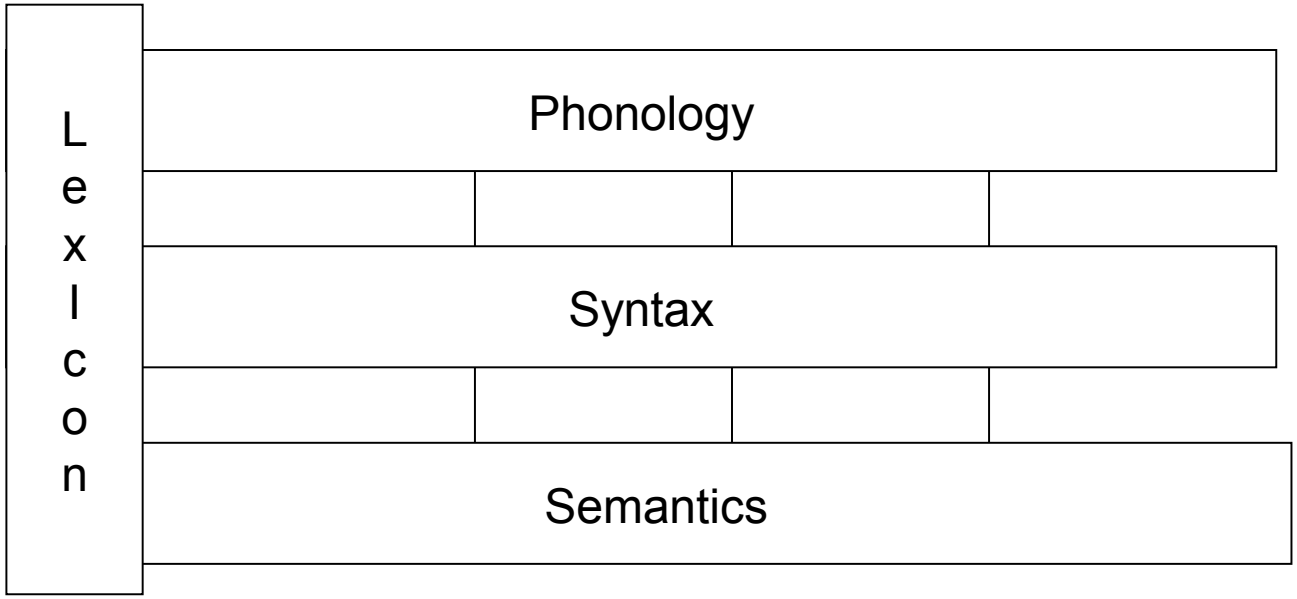


Figure adapted from Croft (2001: 15)

Construction grammar

What is CxG

- Atomist principles of generative grammar and similar isolationist models:
  - Linguistic structures are **fully compositional** and can be broken down into **atomic units**.
  - The ”value” of a complex structure is neither more nor less than the sum of ”values” of its constituent parts.
  - The most important, or worthwhile, unit of grammar is the **rule of linear combination of atomic units**.
  - The atomic units, and only meaning-bearers, of a language are its lexemes.
  - One component of language can, essentially, be described without reference to other components.

Construction grammar

What is CxG

- Some consequences of the isolationist approach to language:
  - **Idioms** cannot, since they cannot be broken down into smaller units, be treated as syntactic phenomena, and **must logically be considered lexical phenomena**.
  - **Irregular** or **idiosyncratic syntactic phenomena** cannot be described using the assumed rules of syntactic combinations, and are thus considered irrelevant **syntactic epiphenomena**.
  - **Pragmatic information**, and other aspects of use, cannot be accounted for (unless a pragmatic component and a set of linking rules is set up).
  - Any **gestaltic** features of regular constructions cannot be accounted for because they cannot be traced back to the atomic lexical units.
  - **Formal variants of grammatical structures** based on **functional factors** are meaningless, because language-function does not figure in isolationist grammars.

Construction grammar

- What is CxG
- Thus, phenomena like the following could not satisfacorily be accounted for in generative grammar:
  - ’The thing is is that I am claustrophobic’
  - ’What me worry?’
  - ’Here’s looking at you, kid’
  - ’Good morning’
  - ’Kick the bucket’
  - ’No can do’
  - ’You will find the book in the back of the store’ vs. ’In the back of the store you will find the book’

Construction grammar

What is CxG?

- CxG was developed as a means of being able to describe idioms and irregular constructions, as well as other structures that are considered **epigrammatical** in isolationist grammar.

- CXG was also developed as a means of being able to take into account the **semantic** and **pragmatic aspects of grammatical structure** without having to resort to complex and – construction grammarians would argue – cognitively unrealistic linking rules.

Construction grammar

What is CxG?

- In order to be able to do this, early construction grammarians rejected the syntactic rule and atomic lexical unit as the central units of grammar and replaced them with the grammatical construction as the central unit of grammar.

Construction grammar

The grammatical construction

- The grammatical construction is in itself a symbolic, or semiotic, unit which combines syntactic form with conventional meaning.

- This way, instead of being spread out over three different components of language, all aspects of a construction are integrated into one **linguistic sign**.

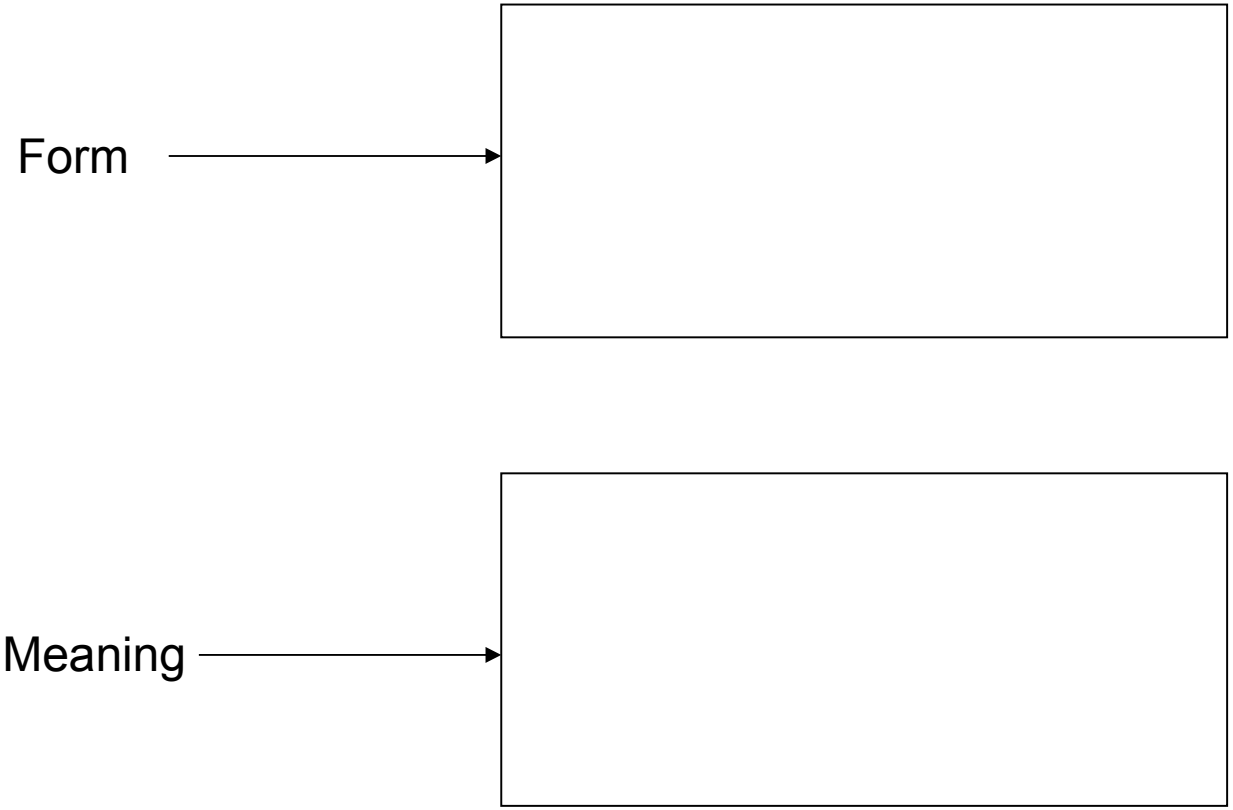
Construction grammar

The grammatical construction

The grammatical construction is a pairing of form and meaning.

Construction grammar

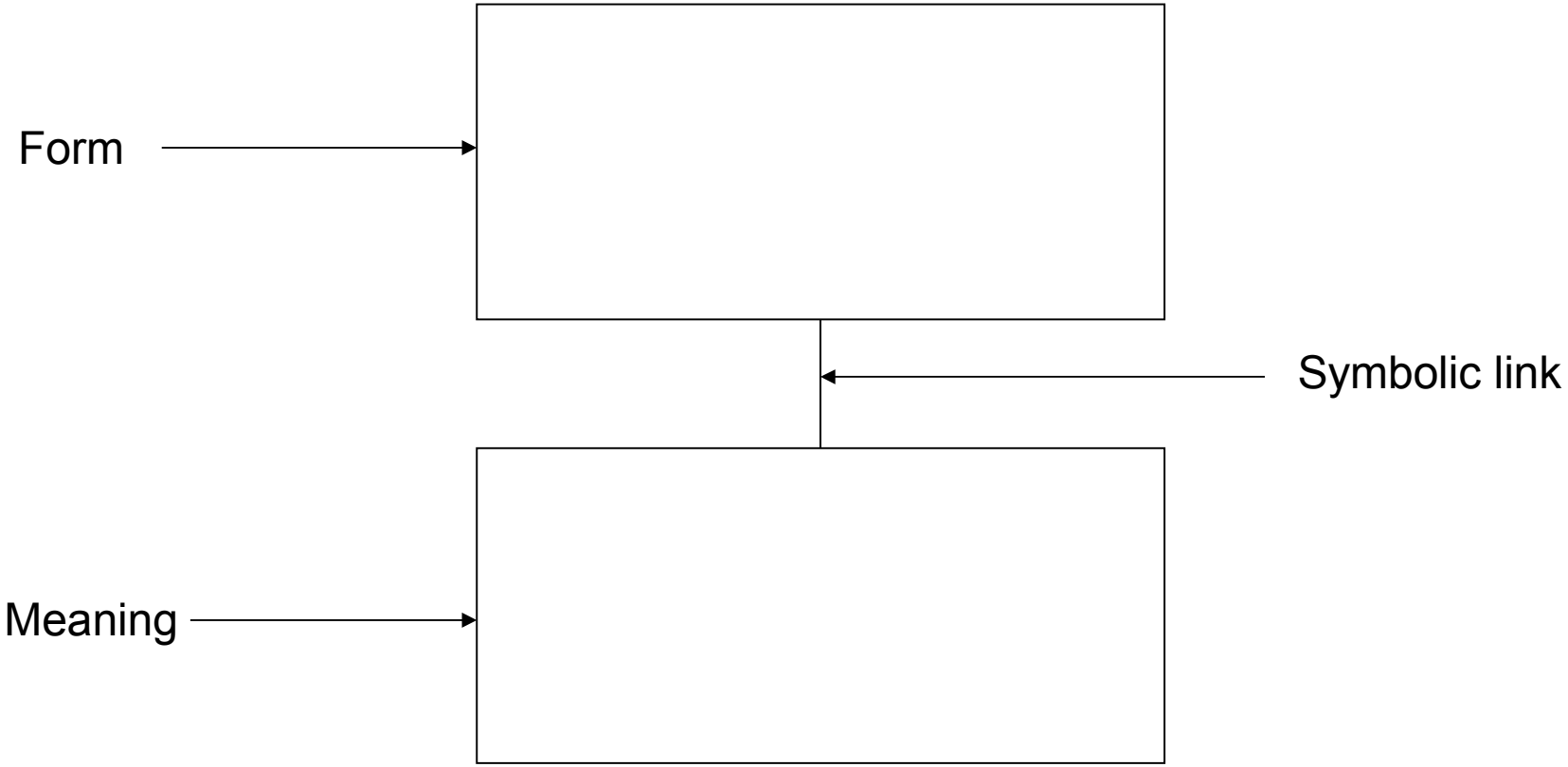
The grammatical construction



The grammatical construction is a pairing of form and meaning.

Construction grammar

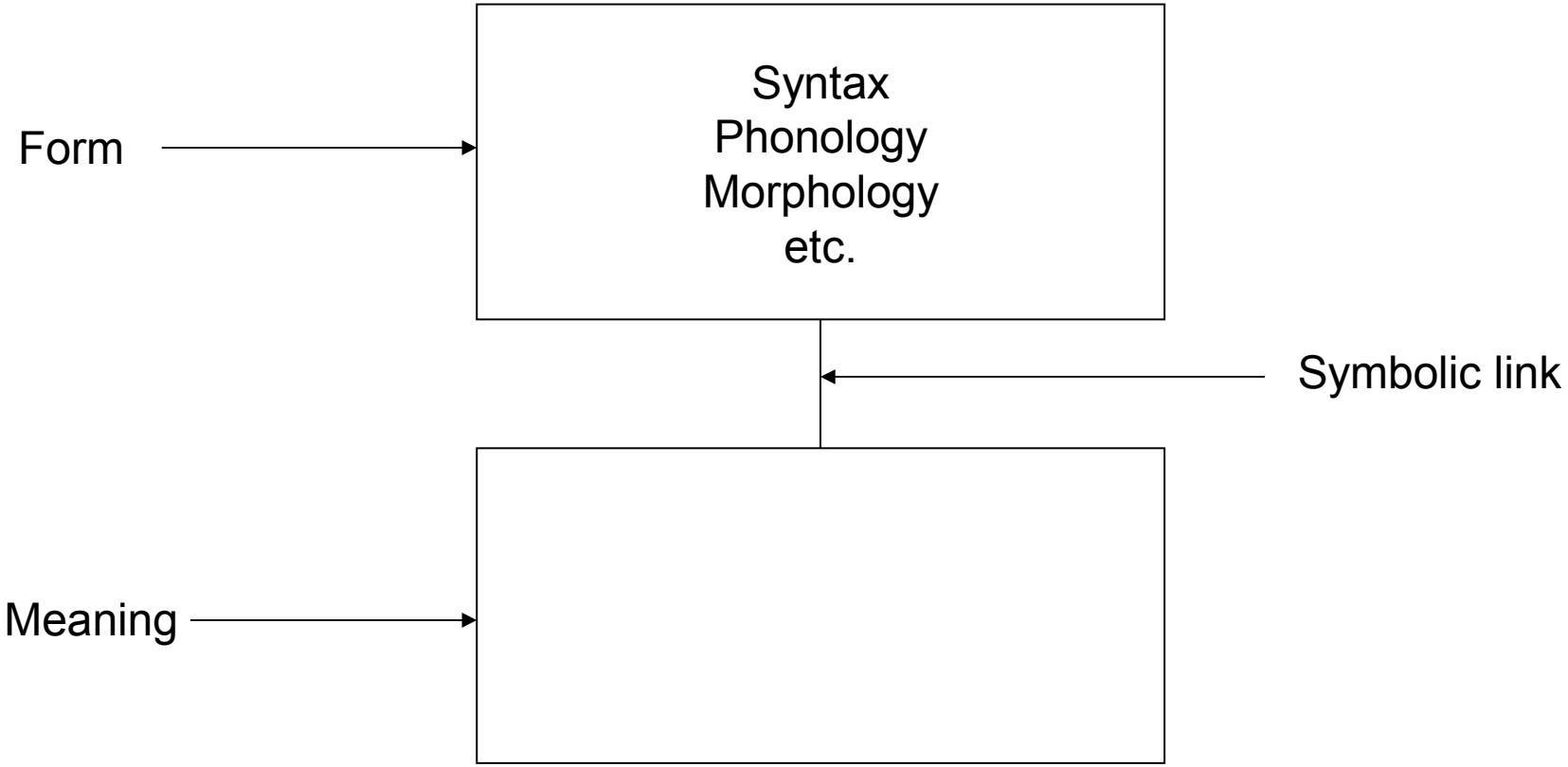
The grammatical construction



The grammatical construction is a pairing of form and meaning.

Construction grammar

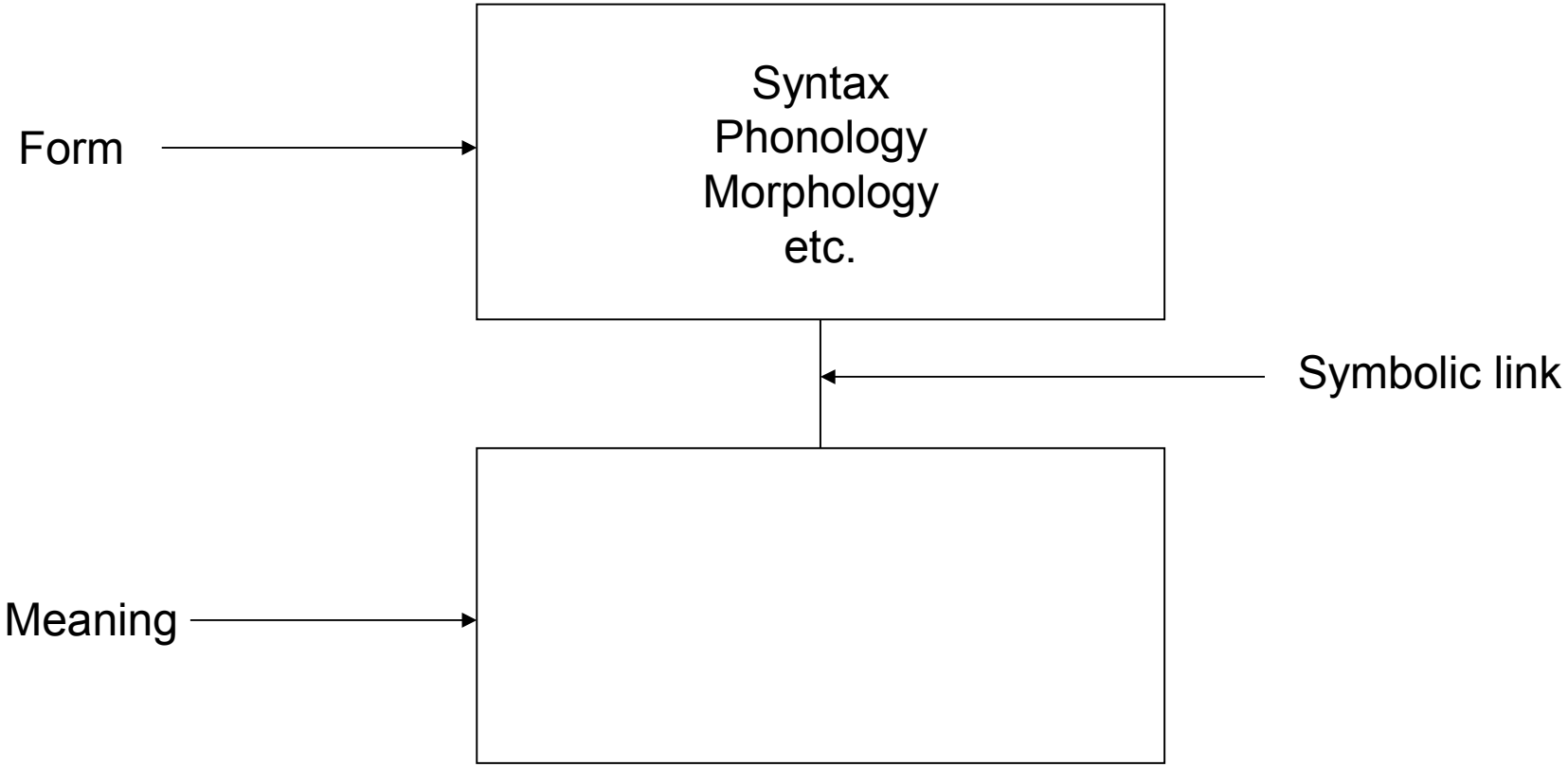
The grammatical construction



All formal features of the construction are integrated into its form.

Construction grammar

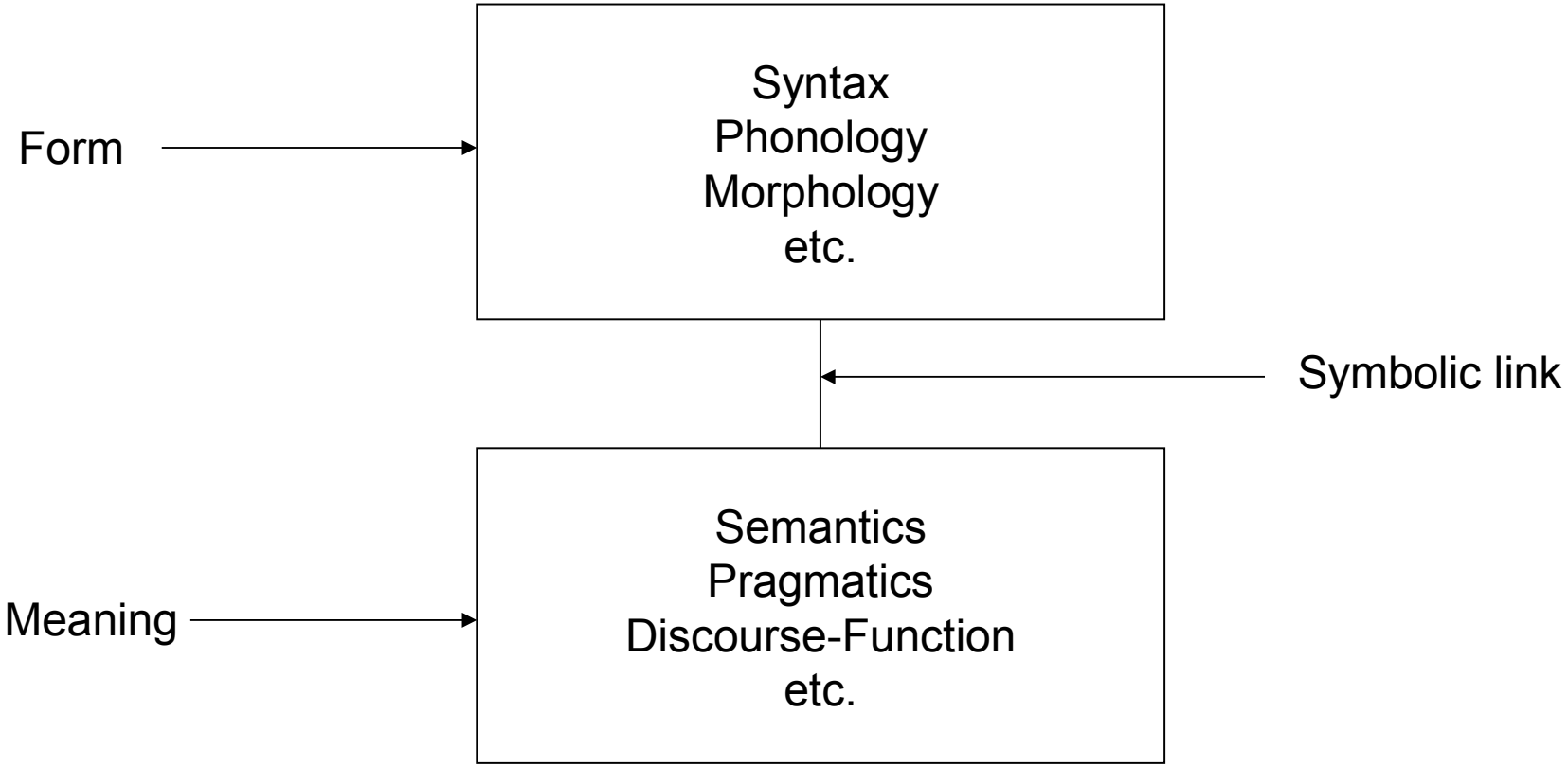
The grammatical construction



This allows for the description of the formal features of a construction and their interplay without using linking rules.

Construction grammar

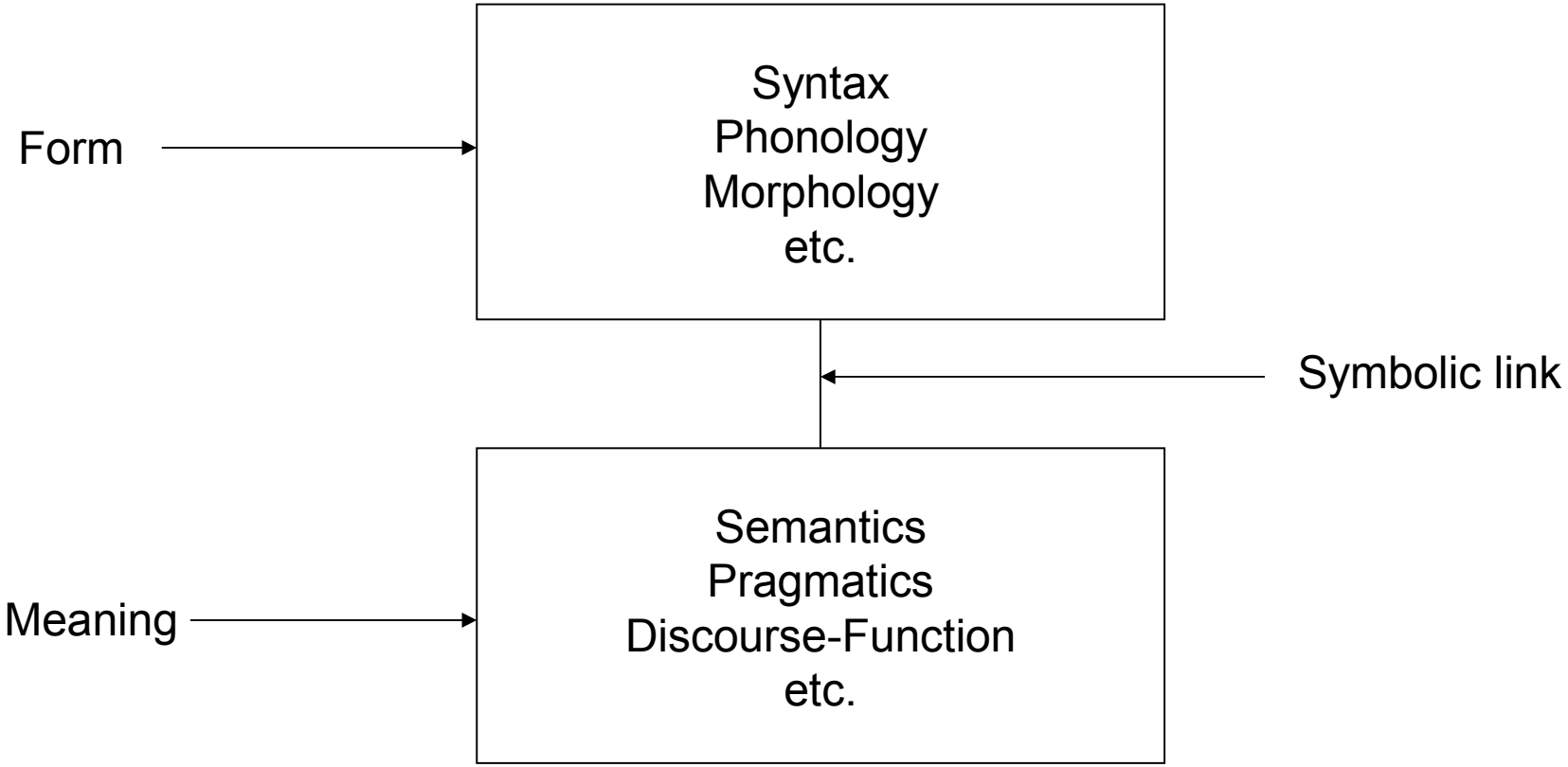
The grammatical construction



The meaning of a construction contains all content- and use-related features.

Construction grammar

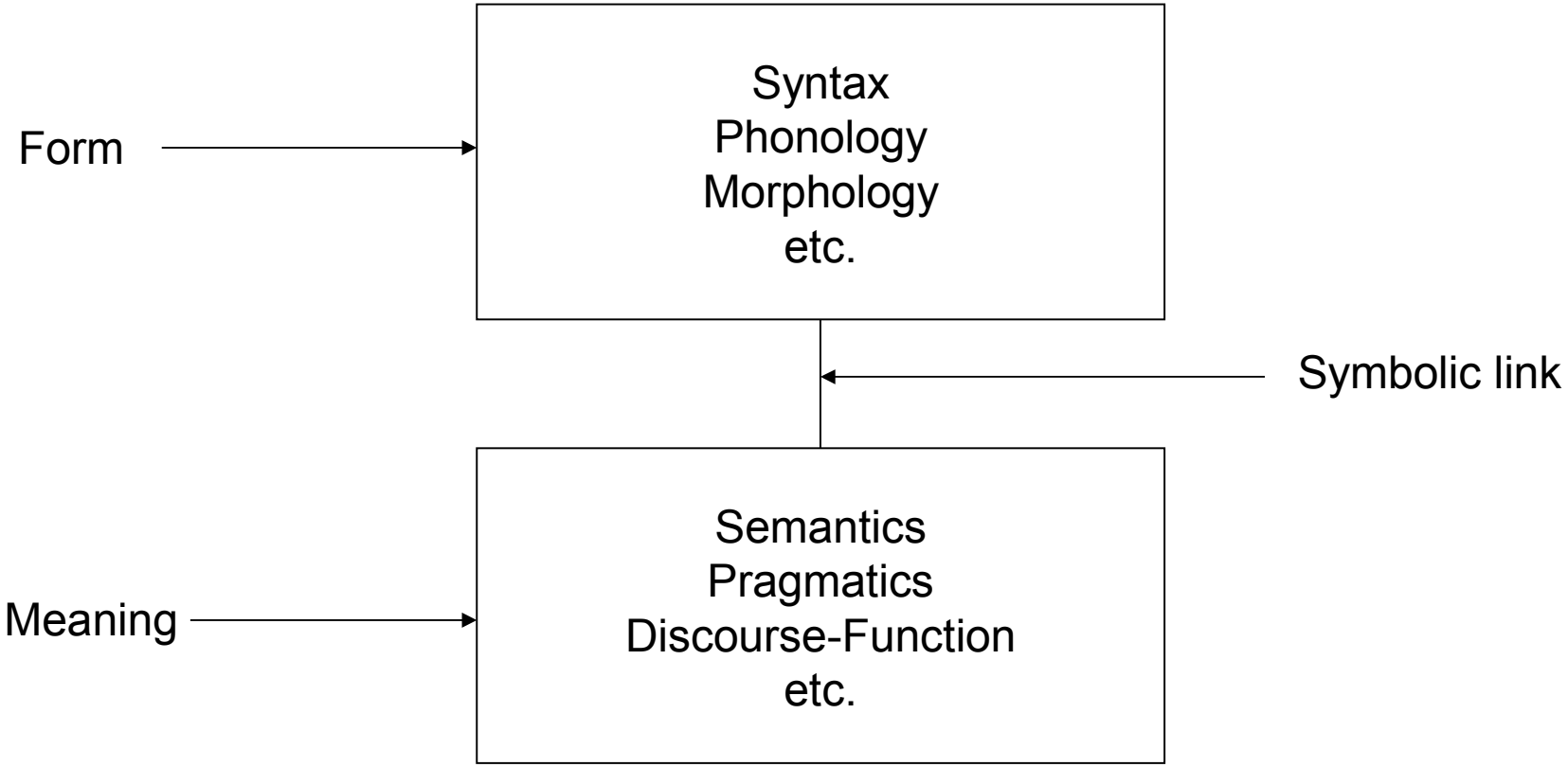
The grammatical construction



This allows the construction grammarian to take into account, not just semantics, but also pragmatics and other meaning-related aspects.

Construction grammar

The grammatical construction



The semiotic nature of the construction allows for the description of internal symbolic features of a construction without using linking rules.

Construction grammar

The grammatical construction

- This allows for the description of idioms and other ”epigrammatical” phenomena on par with the regular and central grammatical construction.

- Indeed, the distinction between **core grammar** and **epigrammar** is wiped out.

Construction grammar

The grammatical construction

- The most important feature of the grammatical construction as envisioned in CxG is that the construction is a meaningful unit.

- That is, the grammatical construction is a **syntactic template** which is **conventionally** associated with some meaning regardless of the words that migh appear in the construction.

Construction grammar

The grammatical construction

- The **ditransitive construction** is an example. It typically occurs with **ditransitive verbs**, but it may also accur with verbs associated with other types of transitivity and even non-verbs (Goldberg 1995):
  - ’Peter gave me the ball’
  - ’Peter played me the ball’
  - ’Peter kicked me the ball’
  - ’Peter shinned me the ball’

Construction grammar

The grammatical construction:

- What is interesting is that the non-ditransitive verbs seem to adopt ditransitive meanings in this construction.

- This is because the ditransitive construction itself expresses TRANSFER OF POSSESSION and imposes this meaning upon verbs that appear in instances of it in use.

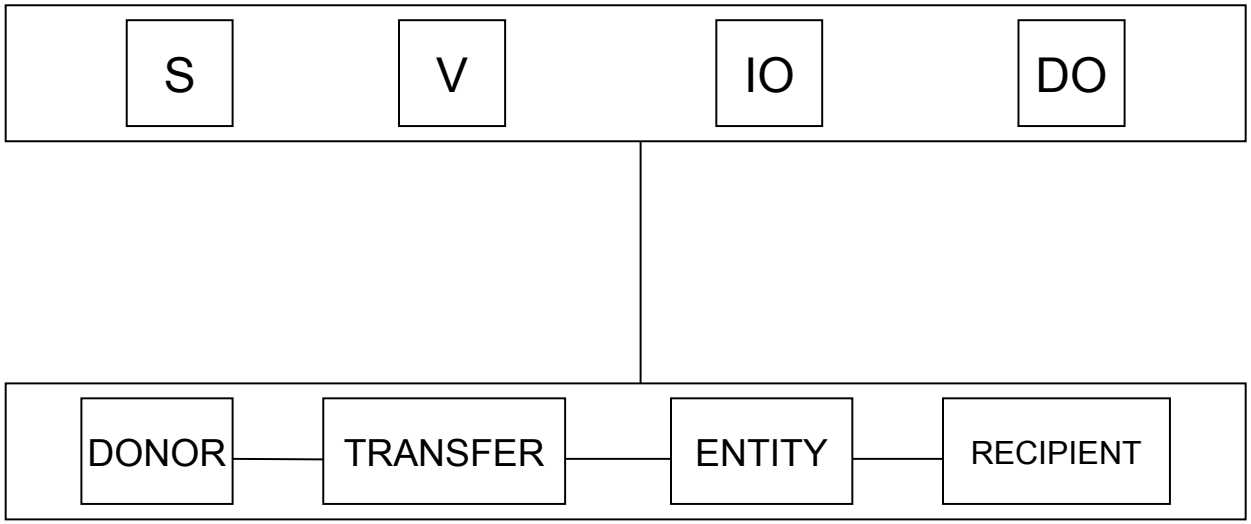
Construction grammar

The grammatical construction

The syntactic template is the S V IO DO-structure.

Construction grammar

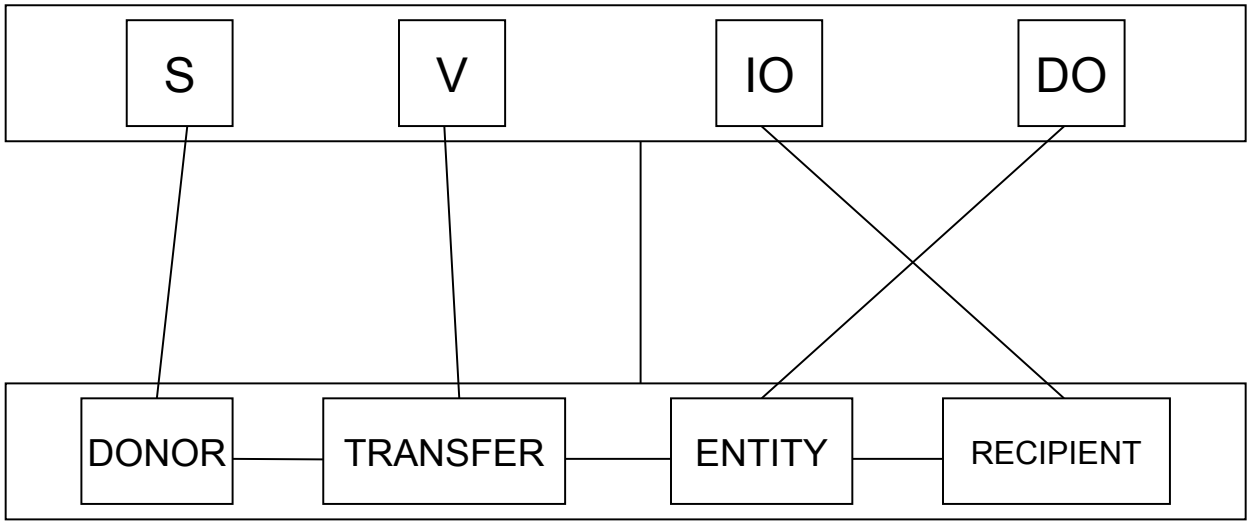
The grammatical construction



This syntactic configuration is conventionally associated with the TRANSFER OF POSSESSION frame/domain/model/scenario in our encyclopedic knowledge.

Construction grammar

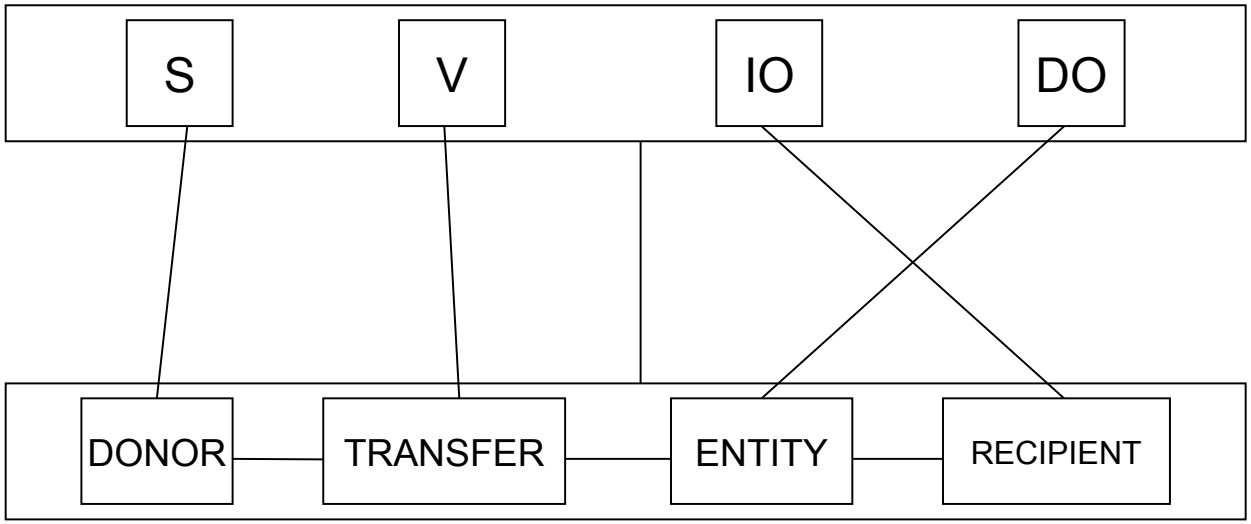
The grammatical construction



Internal symbolic links can be set up in this construction.

Construction grammar

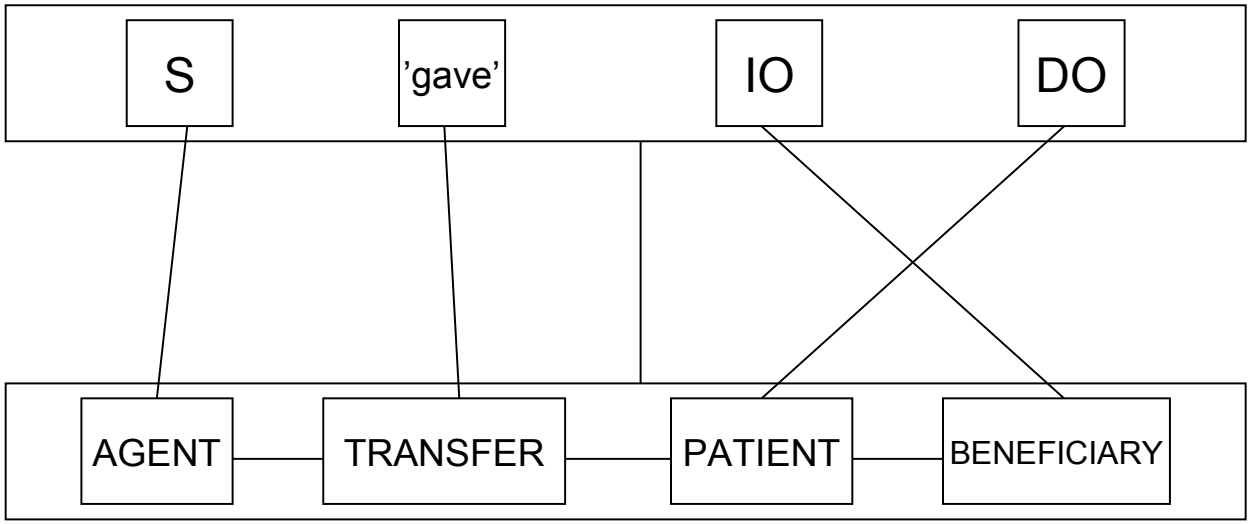
The grammatical construction



Whenever a verb appears in this construction, it adopts a **ditransitive behavior** because of the internal symbolic linkage of the construction.

Construction grammar

The grammatical construction



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Construction grammar

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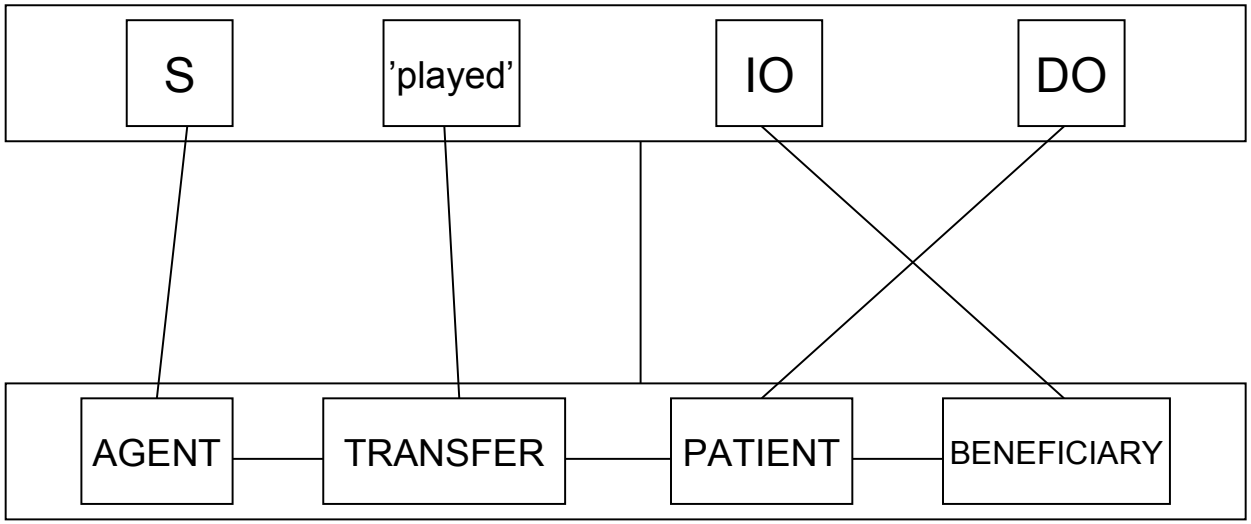

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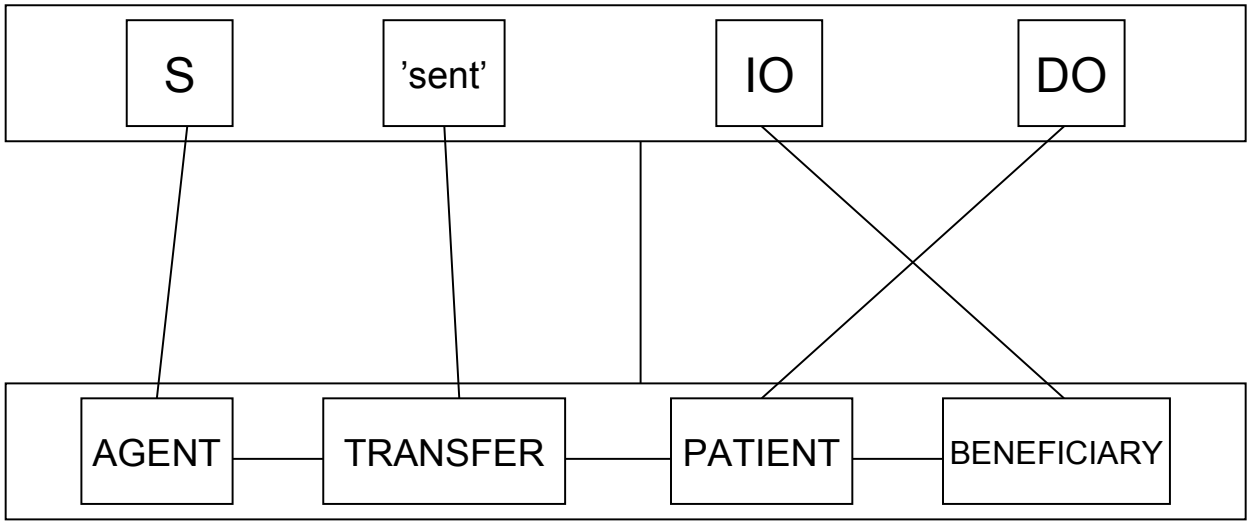

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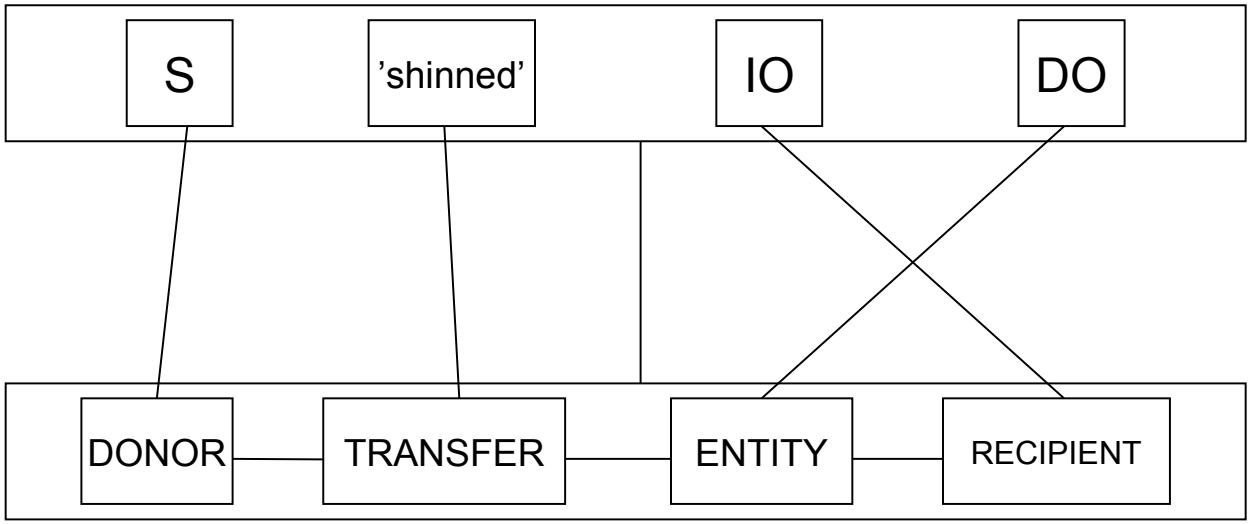


Whenever a verb appears in this construction, it adopts a **ditransitive behavior** because of the internal symbolic linkage of the construction.

Construction grammar

The grammatical construction

- The ditransitive construction illustrates another important feature of constructions: they are **gestaltic**.
  - The construction is not the sum of ’values’ of its components
  - The values, or functions of its components, are defined in relation to the construction.
  - That is why otherwise non-ditransitive verbs become ditransitive when they appear in the S V IO OD structure.

Construction grammar

The grammatical construction

- Many constructions are also idiomatic in the sense that lexical units serving components in a construction may be assigned meanings or functions in the construction which ar not conventionally associated with the lexical units.

- This is what happened to the non-ditransitive verbs in the ditransitive construction.

- Consequently, many constructions are not **totally compositional**, as they cannot be said to be the sum of ’values’ of their component parts.

Construction grammar

The grammatical construction

- This gestaltic approach to constructions has allowed construction grammarians to discover semantic and symbolic details of many grammatical structures otherwise ignored in atomist approaches to grammar.

- It is also an example of the cognitive commitment at play, in that an entire apperatus of syntactic description from isolationist grammar is replaced with one that draws on findings in cognitive **(gestalt) psychology**.

Construction grammar

The grammatical construction

- Many early publications within the CxG framework dealt with idiomatic and ”peripheral” constructions:

  “While construction **grammars** have similarities to a number of other approaches to grammar, meaning, and natural language understanding, construction **grammarians** differ from many other workers in the generativist tradition by their insistence on simultaneously describing grammatical patterns and the semantic and pragmatic purposes to the fine and fussy details of what might be called the **non-central constructions of a language**.” (Fillmore 1988: 36 – emphasis in original)

- This ’butterfly catching’ approach was probably a reflection of the early construction grammarians’ dissatisfaction with generative grammar.

Construction grammar

The grammatical construction

- In the mid 1990s and early 2000s, CxG theory and research was expanded into the territory of what was earlier called core grammar, and less idiosyncratic constructions were analyzed and described.

- This expansion was the next logical step in the development of an all encompassing framework of syntactic analysis.

Construction grammar

The grammatical construction

- In tandem with the expansion of research, the notion of the construction was also modified into being more encompassing, and more in line with both the generalizing and the cognitive commitments.

Construction grammar

The grammatical construction

- Some early definitions:

  "By **grammatical construction** we mean any syntactic pattern which is assigned one or more conventional functions in a language, together with whatever is linguistically conventionalized about its contribution to the meaning of the structures containing it." (Fillmore 1988: 36 – emphasis in original)

  "To analyze a linguistic structure as a grammatical construction in the sense of this model is to interpret it as a non-derived grammatical template in which syntactic, semantic, and grammatical properties come together to form one unit." (Lambrecht 1988: 320)

  "C is a construction iff_{def} C is a form-meaning pair $<F_i, S_i>$ such that some aspect of F_i or some aspect of S_i is not strictly predictable from C's component parts or from other previously established constructions." (Goldberg 1995: 4)

Construction grammar

The grammatical construction

- Some more recent definitions

  “an entrenched routine ... that is generally used in the speech community ... and involves a pairing of form and meaning” (Croft 2005: 274)

  “linguistic knowledge at all levels, from morphology to multi-word units can be characterized as constructions, or pairings of form and meaning … language users exploit constructions at these various levels to discern from a particular utterance a corresponding collection of interrelated conceptual structures.” (Bergen and Chang 2005: 145).

Construction grammar

The grammatical construction

- On the more recent definitions, which very much represents the standard view in CxG today, all symbolic units in language can be considered constructions, even words and morphemes.

- Also, non-idiomatic and compositional structures are considered constructions insofar as they can be shown to be entrenched units in the speech community.

- The expansion of the notion of grammatical construction from complex, idiomatic structures into any type of symbolic structure reflects a **turn towards usage-based linguistics** within CxG.

Construction grammar

The lexicon-syntax continuum

- The sharp distinction between syntax and the lexicon is rejected in CxG.
- Complex constructions, like lexemes, are considered symbolic pairings of form an meaning.
- This is captured by the notion of the **lexicon-syntax continuum**, which is central to CxG.

Construction grammar

The lexicon-syntax continuum

- “In Construction Grammar, no strict division is assumed between the lexicon and syntax. Lexical constructions and syntactic constructions differ in internal complexity, and also in the extent to which phonological form is specified, but both lexical and syntactic constructions are essentially the same type of declaratively represented data structure: both pair form with meaning.” (Goldberg 1995: 7)

Construction grammar

The lexicon-syntax continuum

Construction grammar

The lexicon-syntax continuum

lexicon ⟷ syntax

(simple constructions) (complex constructions)

’this’
’cat’
’burger’

Construction grammar

The lexicon-syntax continuum

lexicon ⟷ syntax

(simple constructions) (complex constructions)

’this’	N
’cat’	V
’burger’	ADJ

Construction grammar

The lexicon-syntax continuum

lexicon ⟷ syntax

(simple constructions) (complex constructions)

’this’	N	N-s
’cat’	V	V-ing
’burger’	ADJ	ADJ-er

Construction grammar

The lexicon-syntax continuum

lexicon ⟷ syntax

(simple constructions) (complex constructions)

’this’	N	N-’s’	’X PULL Y’s leg’
’cat’	V	V-’ing’	’X KICK the bucket’
’burger’	ADJ	ADJ-’er’	’X BUY into Y’

Construction grammar

The lexicon-syntax continuum

lexicon ⟷ syntax

(simple constructions) (complex constructions)

’this’	N	N-’s’	’X PULL Y’s leg’	’V X into Y’
’cat’	V	V-’ing’	’X KICK the bucket’	’X and other Y’
’burger’	ADJ	ADJ-’er’	’X BUY into Y’	’the X BE BE that Y’

Construction grammar

The lexicon-syntax continuum

lexicon ⟷ syntax

(simple constructions) (complex constructions)

’this’ ’cat’ ’burger’	N V ADJ	N-’s’ V-’ing’ ADJ-’er’	’X PULL Y’s leg’ ’X KICK the bucket’ ’X BUY into Y’	’V X into Y’ ’X and other Y’ ’the X BE BE that Y’	S V DO S V IO DO S V DO OC

Construction grammar

The lexicon-syntax continuum

lexicon ⟷ syntax

(simple constructions) (complex constructions)

’this’ ’cat’ ’burger’	N V ADJ	N-’s’ V-’ing’ ADJ-’er’	’X PULL Y’s leg’ ’X KICK the bucket’ ’X BUY into Y’	’V X into Y’ ’X and other Y’ ’the X BE BE that Y’	S V DO S V IO DO S V DO OC

Note how the lexicon-syntax continuum coincides with a substantivity-schematicity continuum.

Construction grammar

The lexicon-syntax continuum

lexicon ⟷ syntax

(simple constructions) (complex constructions)

’this’ ’cat’ ’burger’	N V ADJ	N-’s’ V-’ing’ ADJ-’er’	’X PULL Y’s leg’ ’X KICK the bucket’ ’X BUY into Y’	’V X into Y’ ’X and other Y’ ’the X BE BE that Y’	S V DO S V IO DO S V DO OC

substantive ⟷ schematic

(fixed/bound) (open/unbound)

Note how the lexicon-syntax continuum coincides with a substantivity-schematicity continuum.

Construction grammar

Compositionality and idiomaticity

- Some constructions are **compositional** in the sense that **internal bi-unique symbolic links** can be set up between formal units and semantic units:

- Some constructions are **non-monadic** (Bache 1997: 159-166), as neat bi-unique symbolic relations cannot be set up:

Construction grammar

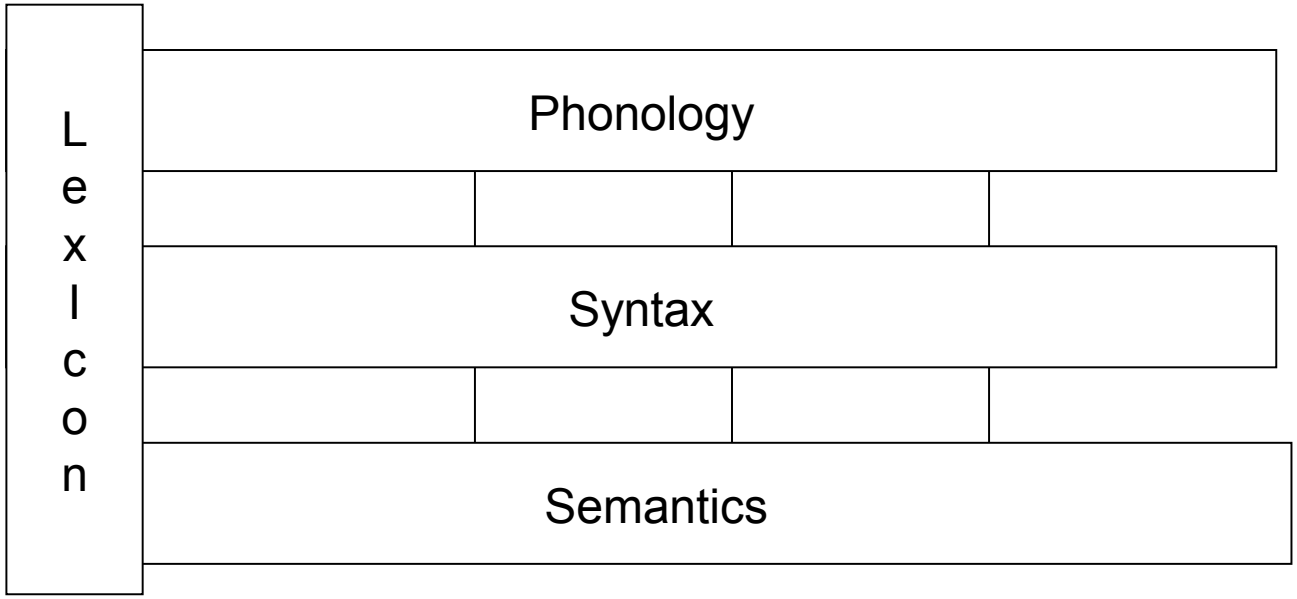
Compositionality and idiomaticity

- Non-compositional constructions tend to be idiomatic.
- But even compositional ones can be idiomatic (as we saw with the ditransitive construction).
- This idiomatic compositionality principle can be traced back to gestalt theory:

  “Gestalts are at once holistic and analyzable. They have parts, but the wholes are not reducible to the parts … They have additional properties by virtue of being wholes, and the parts may take on additional significance by virtue of being within those wholes.” (Lakoff 1977: 246)

Construction grammar

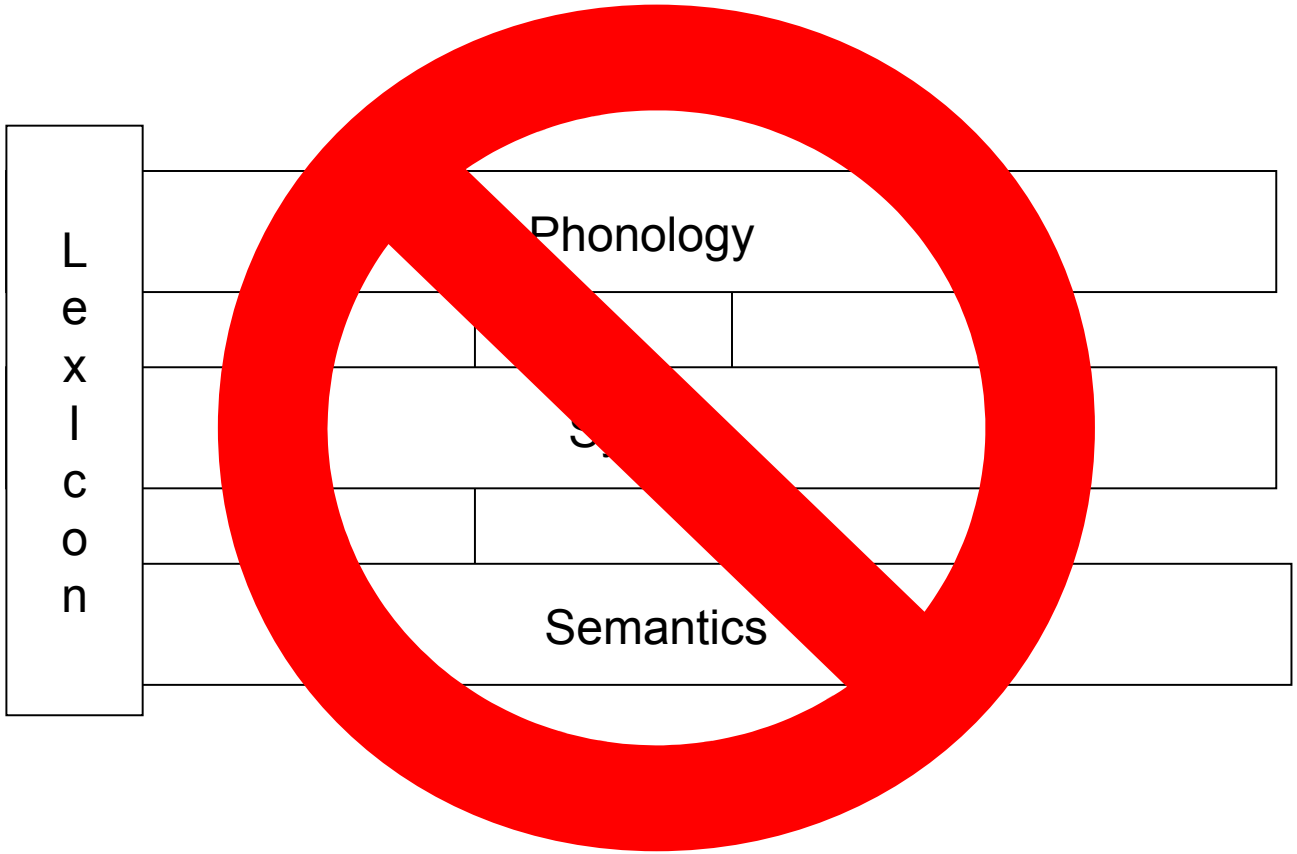
The structure of grammar



CxG rejects the **stratified, or componential, model** of language associated with isolationist theories.

Construction grammar

The structure of grammar



CxG rejects the **stratified, or componential, model** of language associated with isolationist theories.

Construction grammar

The structure of grammar

CxG rejects the **stratified, or componential, model** of language associated with isolationist theories.

Construction grammar

The structure of grammar

- The statified, or componential, model is replaced with a **network model**, in which linguistic competence has the form of a knowledge network of constructions.

- In keeping with the cognitive commitment, the network is organized into radially structured categories.

- Each **constructional category** is a network of its own, based on **category inheritance**, and the same cognitive processes and principles that apply to encyclopedic knowledge apply to constructional networks.

Construction grammar

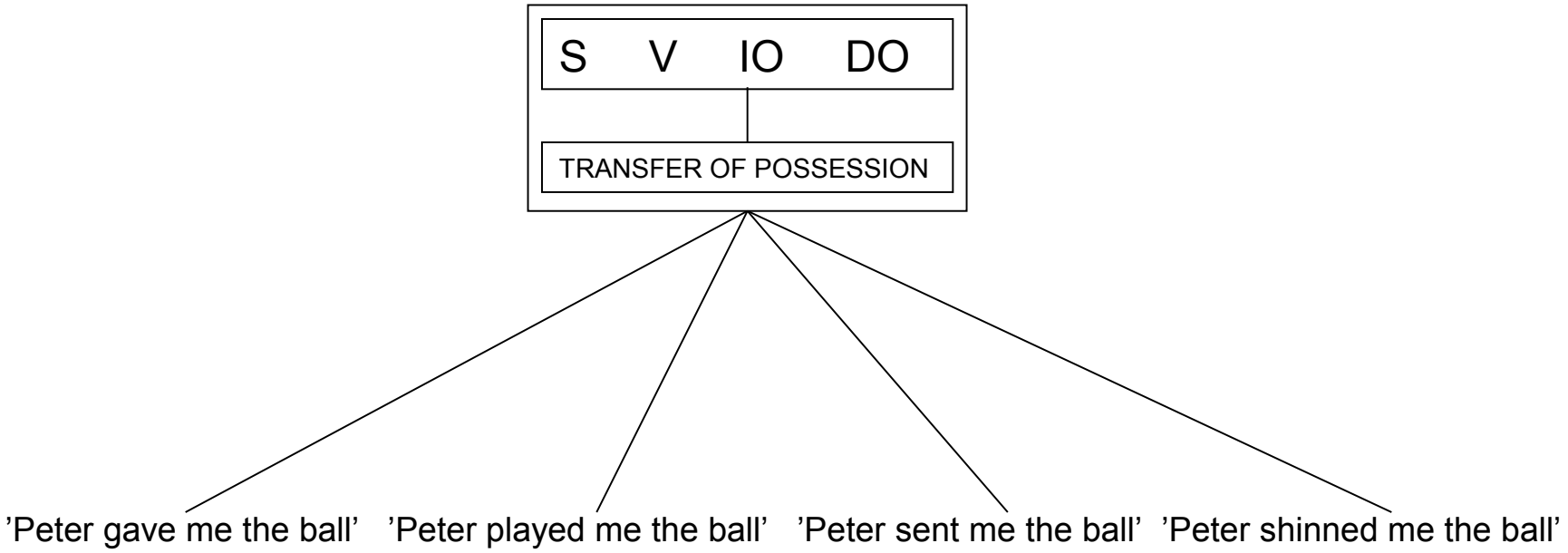
The structure of grammar

- Each constructional network evolves around a central **abstract construction** (Kay 2000) which provides the general features of the construction.

- Instances of the construction then **inherit** these features.

Construction grammar

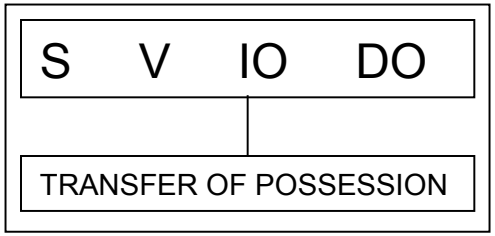
The structure of grammar



The ditransitive construction licenses grammatically acceptable instances.

Construction grammar

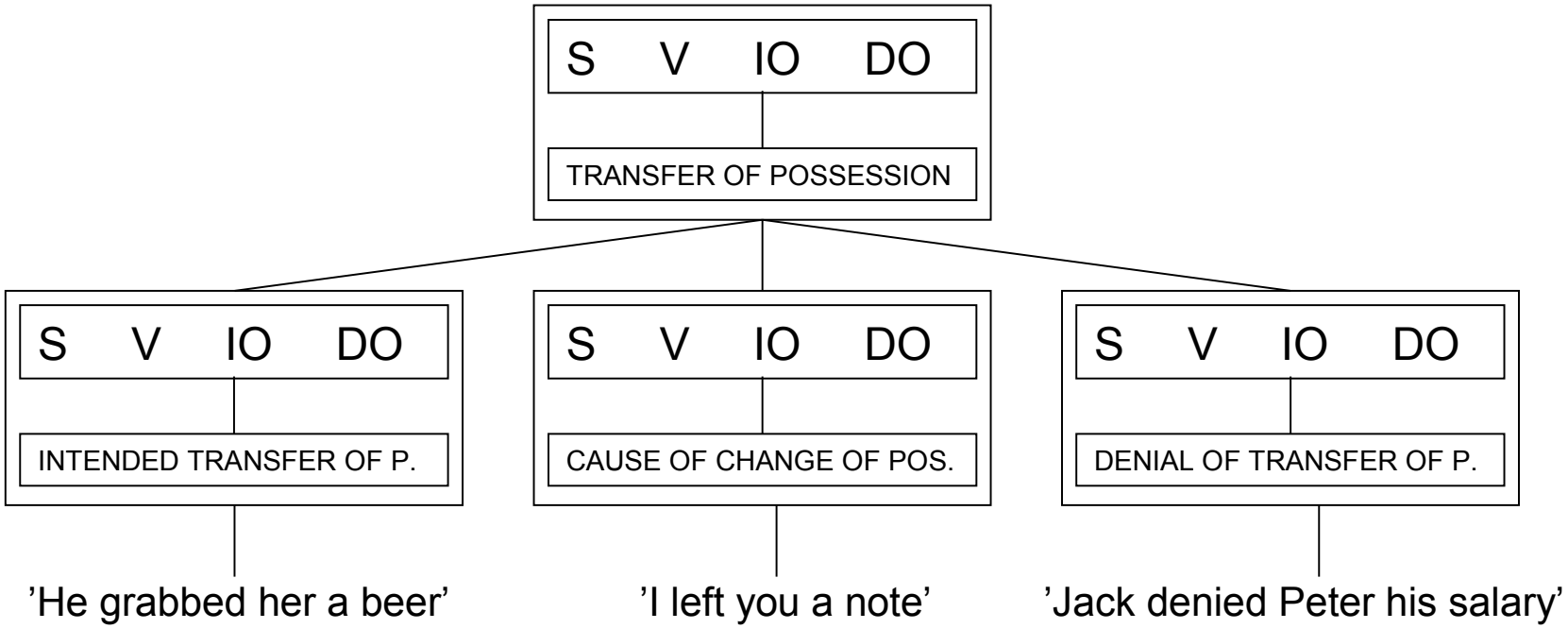
The structure of grammar



Constructional networks may contain specific **subconstructions** with specific functions.

Construction grammar

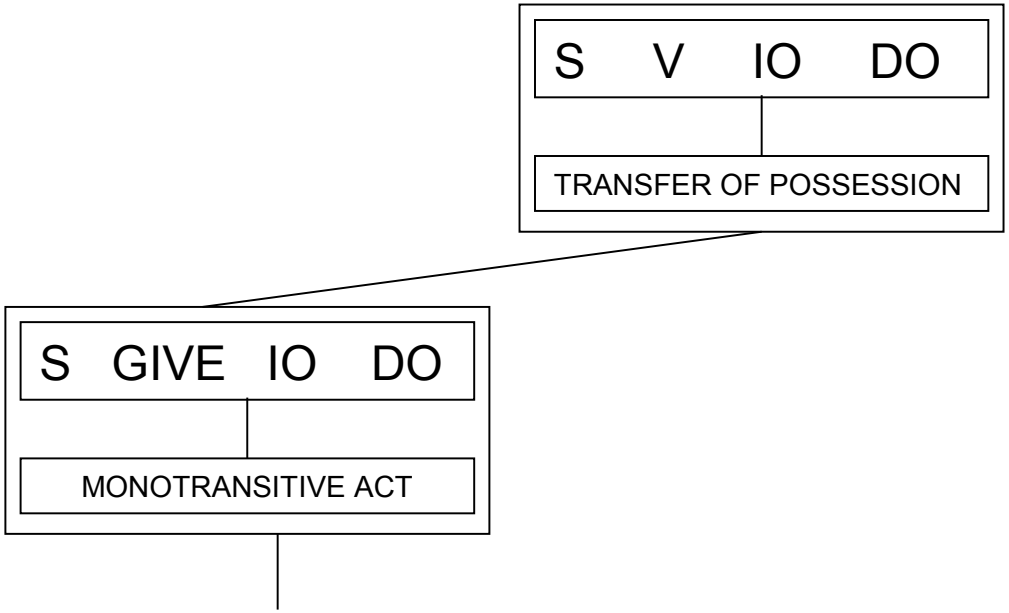
The structure of grammar



… such as semantically specified semantic scenarios.

Construction grammar

The structure of grammar

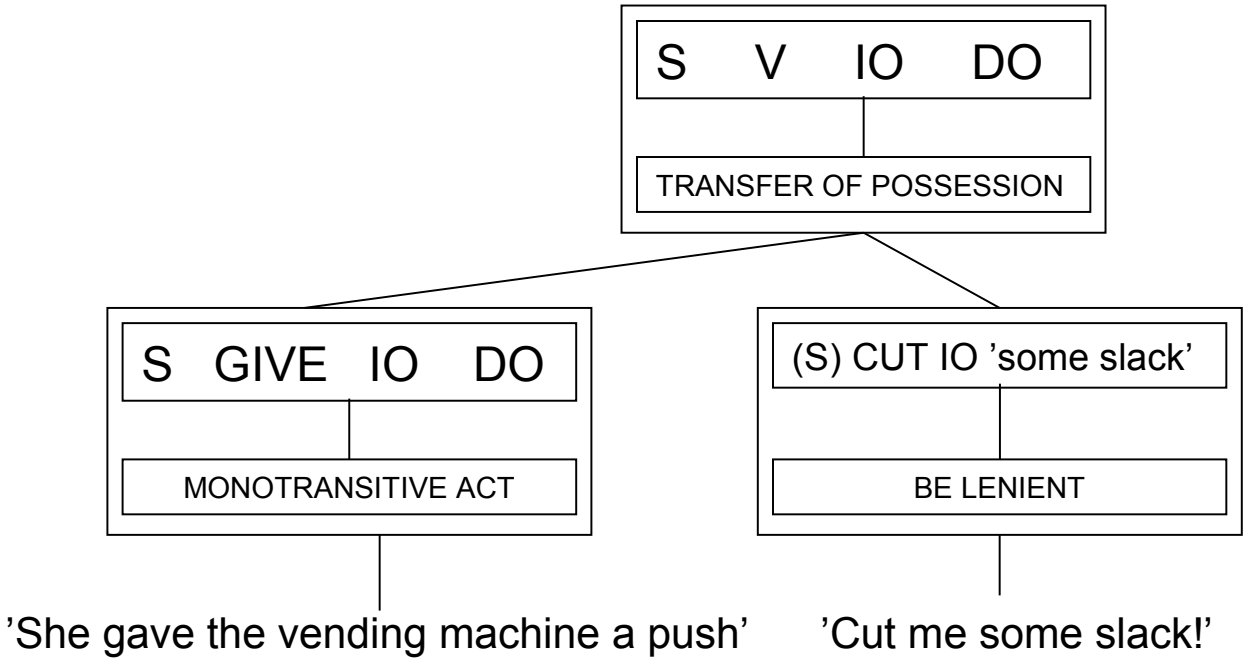


’She gave the vending machine a push’

… or metaphorical extensions

Construction grammar

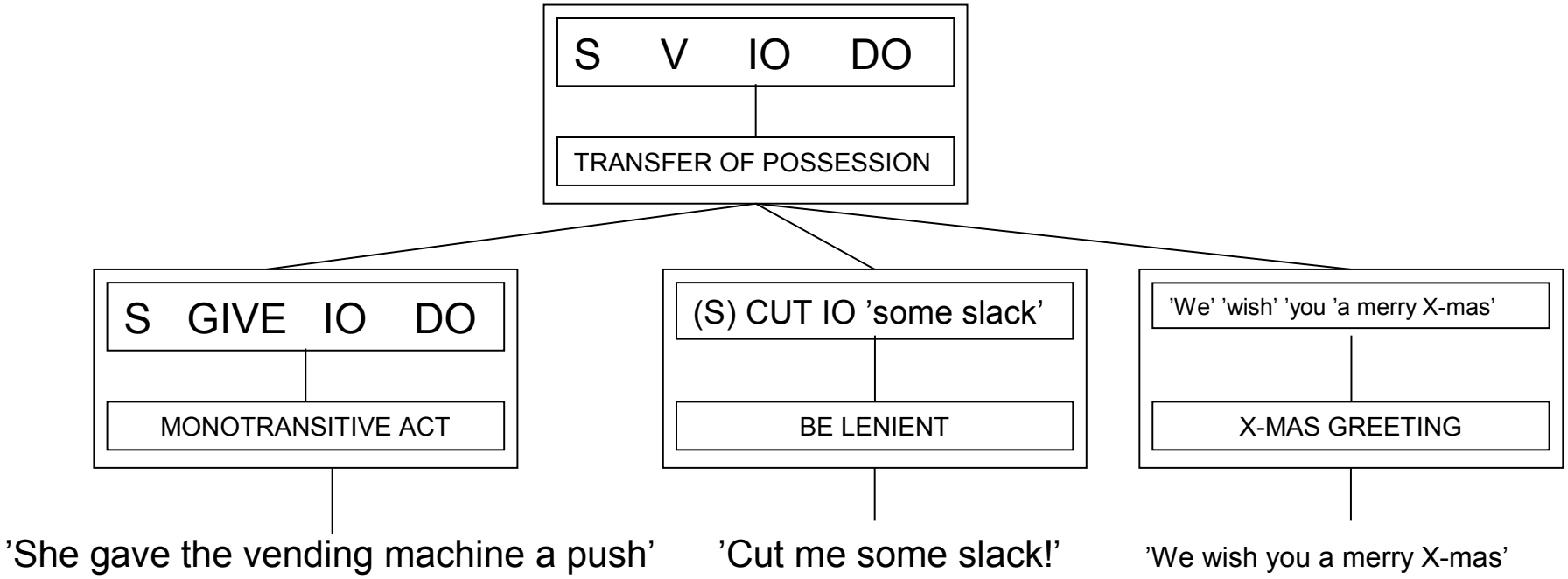
The structure of grammar



… or metaphorical extensions or idiomatic extensions

Construction grammar

The structure of grammar



… or metaphorical extensions or idiomatic extensions or pragmatic extensions.

Construction grammar

The structure of grammar

- Four possible inheritance models (Croft & Cruse 2004):
  - **Complete inheritance model**: based on maximal generality, and all categorial information is stored at the level of the abstract construction. No redundancy is allowed.
  - **Default inheritance model**: retains a high degree of generality, but allows for redundancy at subconstruction level.
  - **Usage-based model**: induction-based model, allowing for redundancy and subconstructions based on pragmatic and other observed patterns in language use.
  - **Full entry model**: theoretically possible model in which each instance of a construction is a construction in itself.

Construction grammar

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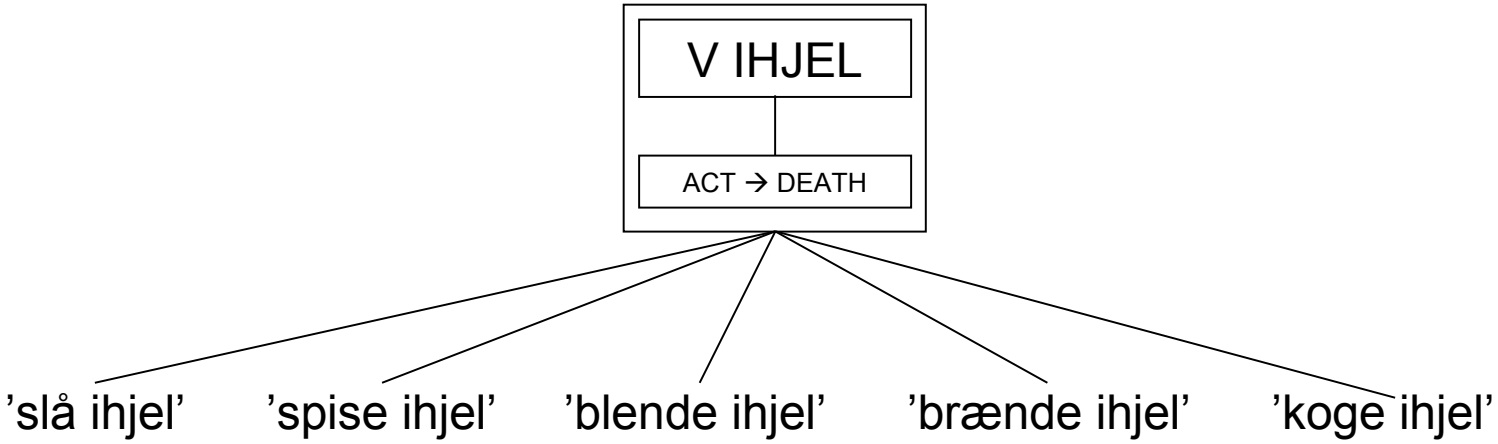
- Complete inheritance model



Construction grammar

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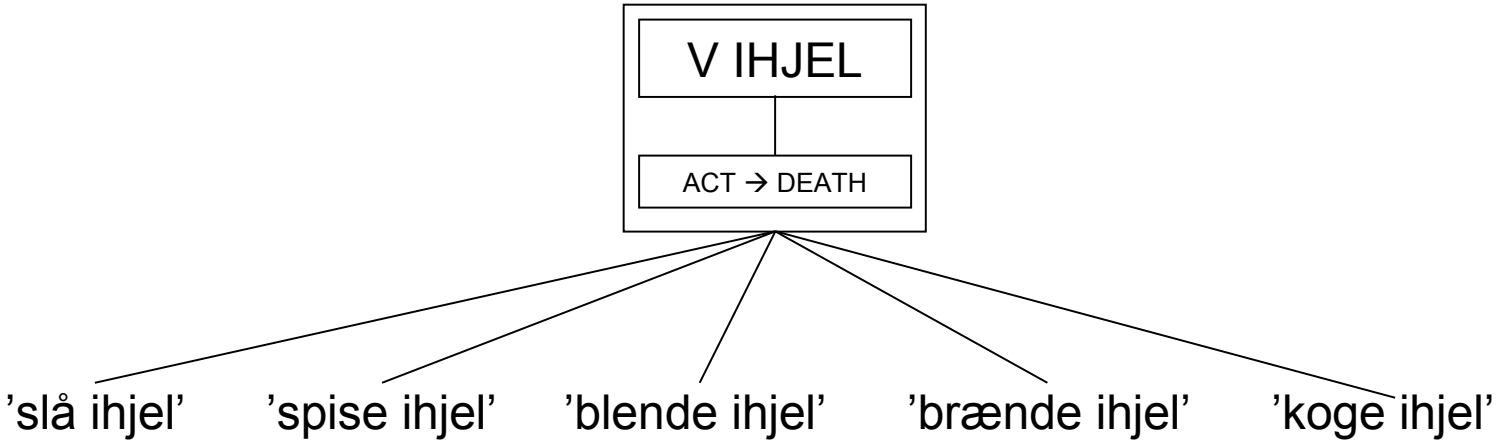
- Complete inheritance model



The problem with complete inheritance models is that they do not account for, metaphorical extensions, idiomatic extensions, differences in usage-patterns, and other types of subconstructions.

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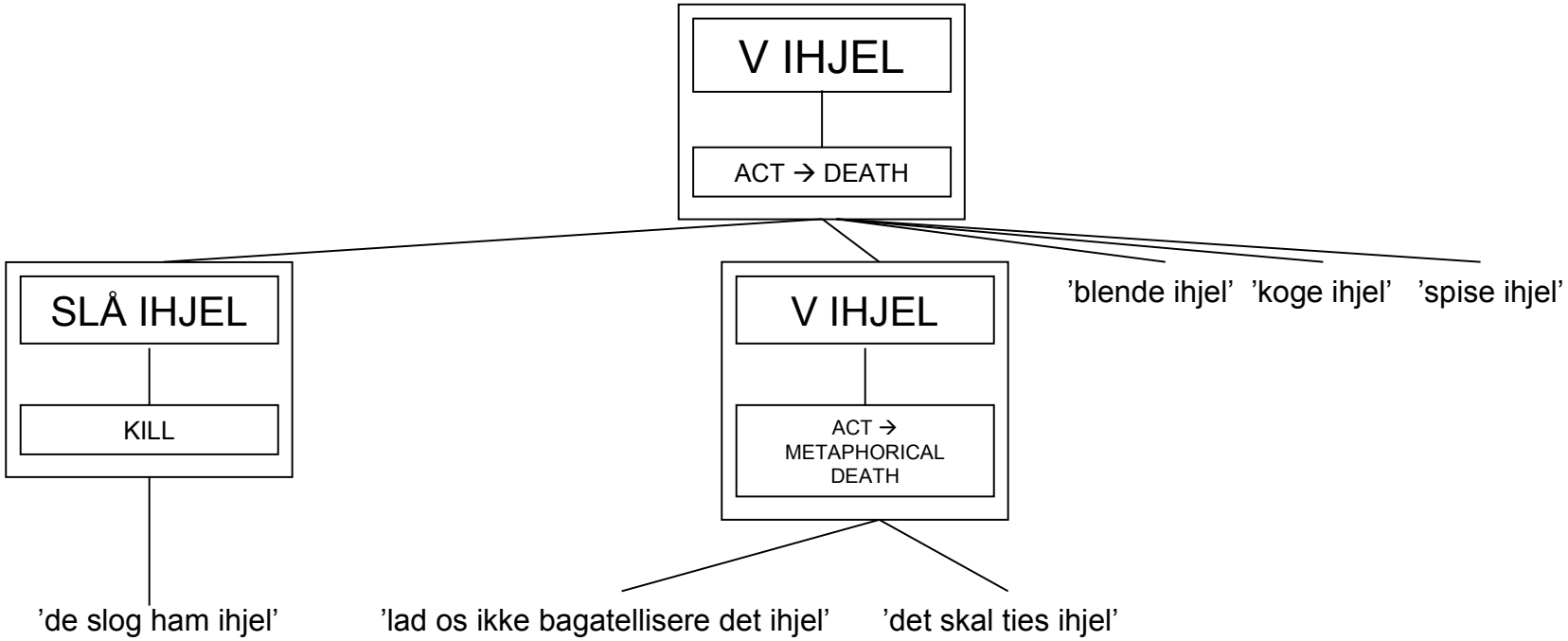
- Default inheritance model

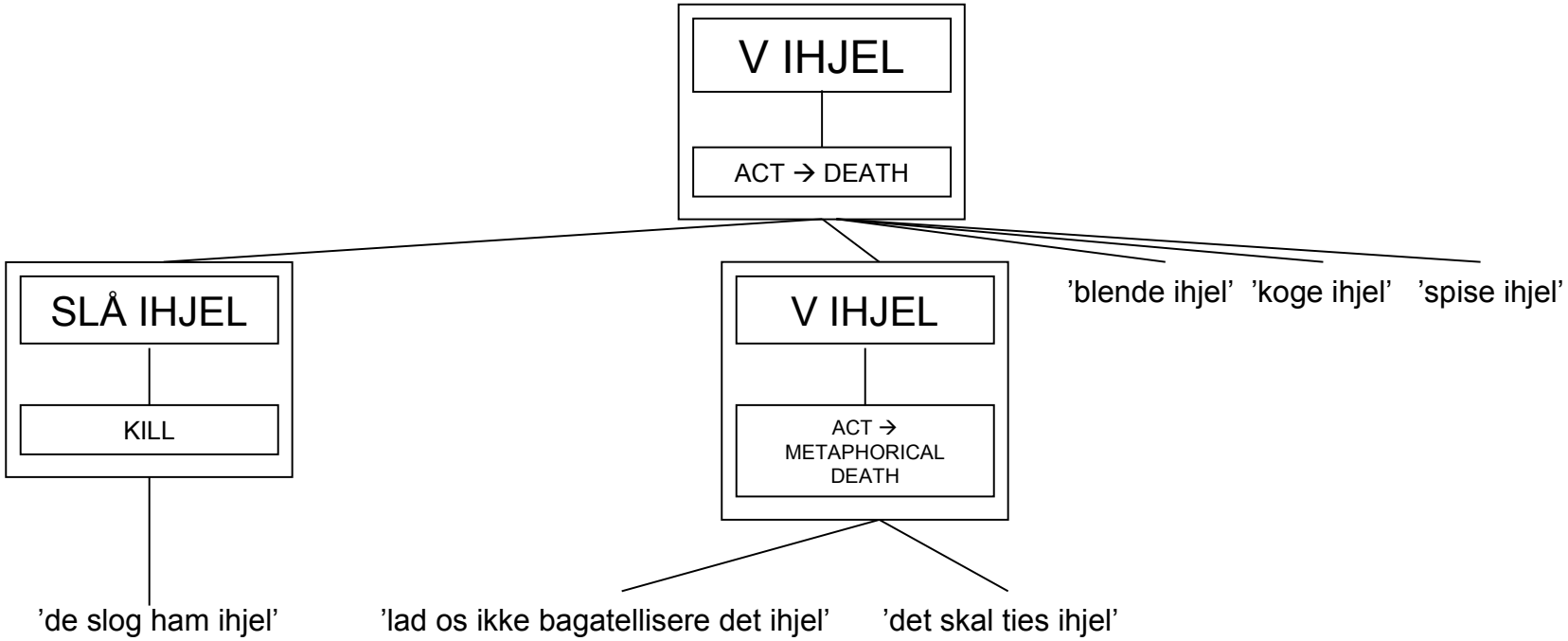


The default inheritance model allows for semantically specific subconstructions

Construction grammar

The structure of grammar

- Default inheritance model



… but it does not allow for many observable usage-based details.

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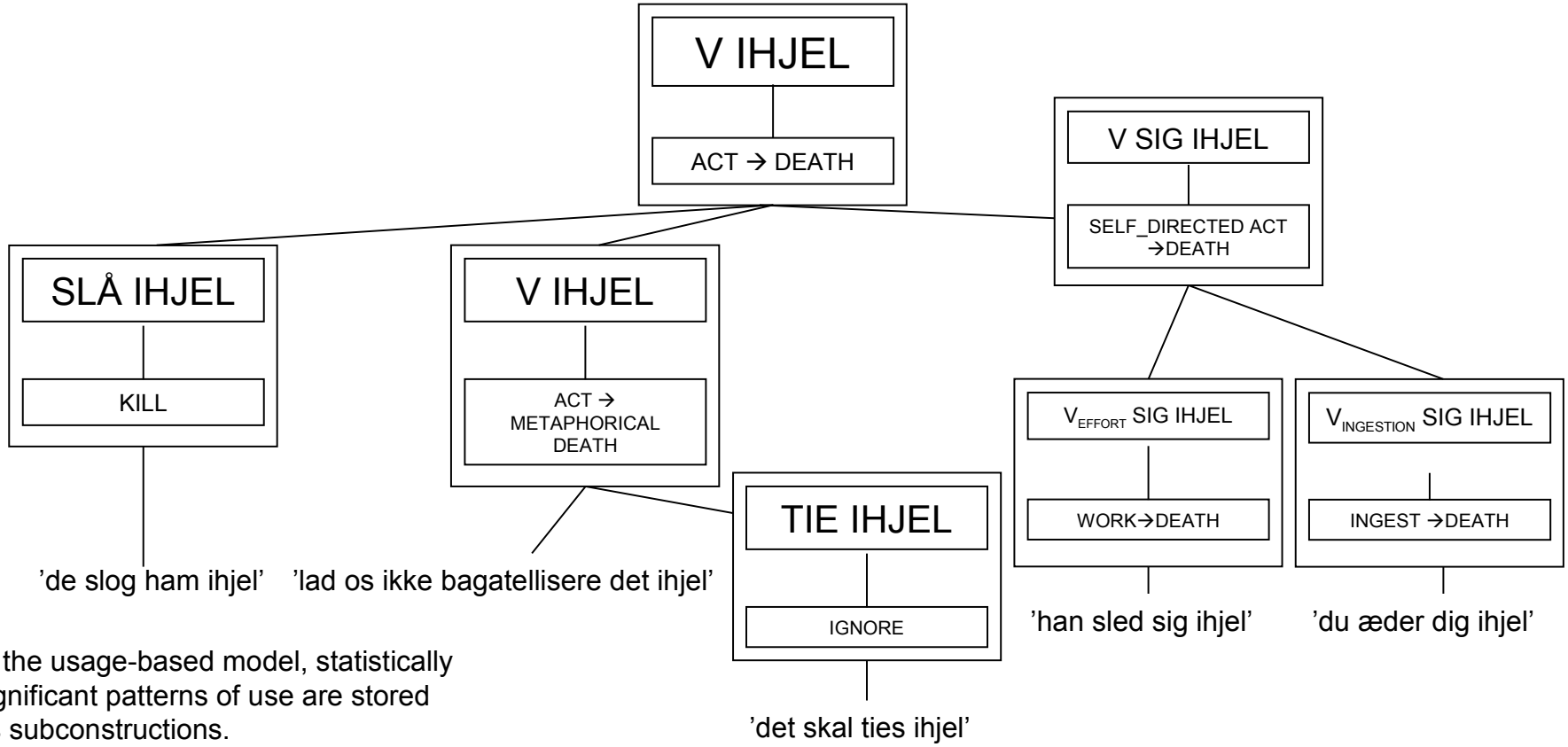
- The usage-based model



In the usage-based model, statistically significant patterns of use are stored as subconstructions.

Construction grammar

The structure of grammar

- Early versions of CxG embraced the complete inheritance model.
- With the publication of Goldberg (1995), the default inheritance model became more popular.
- Recently, following Croft (2001), the usage-based model has become, or at least is becoming, the main structural model of the organization of grammar.

Construction grammar

The structure of grammar

- The usage-based model is based on inductive language acquisition.
- The emergent system thesis is central in the usage-based model.
- Out of the four possible models, the usage-based one is the most compatible with the cognitive commitment.