Who kissed who?
Constructing a language for learners, teachers and researchers

Laura A. Janda
Overview

1. Why Construction Grammar?
2. What is Construction Grammar?
3. Who Kissed Who? and other problems
4. Corpus investigation of Constructions
5. Experimental investigation of Constructions
6. Constructicons for learners
1. Why Construction Grammar?

*Who Kissed Who?*

...and other problems you can’t solve with rules

Generative grammar presumes that

- syntax is separate from lexicon
- grammatical structure is governed by rules
- grammatical constructions are compositional

But there are a lot of questions that you can’t answer from this perspective:

- *The boy was kissed by the girl.* Who kissed who? Why is this hard?
- An accident waiting to happen
- *Have a great time and watch your step!*
- Death by constructions: *Kick the bucket* and *Curiosity killed the cat*
- *Give the Red Cross money,* but don’t *Donate the Red Cross money*
- What’s with after? *I arrived/looked after John*
- Czech *věřící*: how believing became a characteristic
1. Why Construction Grammar?  
*Who Kissed Who?*  
...and other problems you can’t solve with rules

In section 3 we will go through all of these problems for learners and linguists and show how they are accounted for in Construction Grammar...  
...but first we should look at what Construction Grammar is.

But there are a lot of questions that you can’t answer from this perspective:

- *The boy was kissed by the girl.* Who kissed who? Why is this hard?
- *An accident waiting to happen*
- *Have a great time and watch your step!*
- Death by constructions: *Kick the bucket* and *Curiosity killed the cat*
- *Give the Red Cross money,* but don’t *Donate the Red Cross money*
- What’s with after? *I arrived/looked after John*
- Czech *věřící:* how believing became a characteristic
2. What is Construction Grammar?

Before we answer this question, we need to understand
– What is Cognitive Linguistics?

We will answer this question with reference to:
1. Basic **assumptions** about language
2. Relationship between **language and cognition**
3. Structure of linguistic **categories**

And with reference to

William Croft’s *Radical Construction Grammar* 2001
Adele Goldberg’s *Constructions at Work* 2006
Cognitive Linguistics: Assumptions

**Minimal Assumption:** language can be accounted for in terms of general cognitive strategies
- no autonomous language faculty
- no strict division between grammar and lexicon
- no a priori universals

**Usage-Based:** generalizations emerge from language data
- no strict division between langue and parole
- no underlying forms

**Meaning is Central:** holds for all language phenomena
- no semantically empty forms
- meaning is grounded in human experience
- metaphor and metonymy play a major role in grammar
Cognitive Linguistics: Language & Cognition

- Linguistic cognition has **no special status**
  - All linguistic phenomena can be explained via **general cognitive mechanisms**
- Language is **not divided** into discrete levels or modules
  - phonology, morphology, syntax and lexicon form a **continuous phenomenon**
  - primary motive for all linguistic phenomena is **meaning**
Cognitive Linguistics: Categories

- Linguistic categories are cognitive categories and have the same structure
  - Established through research in psychology and neurobiology
  - Radial category centered on a prototype with extensions
Furniture for sitting
If you speak English, your chair category looks like this:

- lawn chair
- high chair
- wheelchair
- rocking chair
- armchair
If you speak Norwegian, your *stol* category looks like this:

- **solseng**
- **barnestol**
- **stol**
- **ruljestol**
- **gyngestol**
- **lenestol**
If you speak Czech, you have overlapping židle and křeslo categories:
If you speak Russian, you have a стул category and a кресло category:
The take-home lesson about chairs:

• Categorization isn’t “out there” in the world, reality can be categorized in different ways

• Different languages can use different strategies for categorizing experience

• This is true for their grammatical constructions too
William Croft

Radical Construction Grammar 2001

• Syntax is semantically motivated
• Linguistic categories ("adjective", "passive", "dative") are language-specific
• No strict universals, but some tendencies
• Idiomaticity is a cline
• Constructions are the basic units; pairings of form and meaning
Adele Goldberg’s Cognitive Construction Grammar (Constructions at Work 2006)

- Language is the aggregate network of constructions
- Language is **learned** on the basis of input and general cognitive mechanisms
- Storage and grammatical “rules” (generalizations) **overlap, coexist and cooperate**
- Idioms are **not special**, no clear boundary between idioms and grammar
Properties of Constructions

Constructions are language-specific form-meaning pairings available at all levels of linguistic complexity

• In addition:
  a) language is a network of related constructions
  b) meaning is often not entirely compositional
  c) meaning can be complex
  d) form a continuum from idiomatic to schematic
  e) can have relationships to specific words
  f) emerge as “chunks”
  g) can evolve over time

We will address each of these properties in connection with the seven “problems” we previously identified
3. **Who Kissed Who? and other problems**

a) The boy was kissed by the girl. Who kissed who?
b) An accident waiting to happen
c) Have a great time and watch your step!
d) Death by constructions: Kick the bucket and Curiosity killed the cat
e) Give the Red Cross money, but don’t Donate the Red Cross money
f) What’s with after? I arrived/looked after John
g) Czech věřící: how believing became a characteristic

a) Relationships among constructions
b) Holistic meaning of constructions
c) Polysemy of constructions
d) Idiomaticity vs. schematicity of constructions
e) Relationships between specific words and constructions
f) Chunking
g) Historical drift
a) *The boy was kissed by the girl*

and Relationships among constructions

Who kissed who?

Why do learners choose A instead of B?

Because:

- ✔ they know that constructions are related to each other
- ✔ they know that word order is important in English
- ✗ they assume that this is related to the transitive NP VP NP construction
Another family of related constructions in English: Subject Auxiliary Inversion (SAI)

Yes/No questions: Did he go?

WH-questions: What did he do?

Counterfactual conditionals: Had she left on time, she’d be here now.

Initial negative adverbs: Not until today did he take a break.

Wishes/Curses: May you live a good life!

Exclamatives: Boy, are you tired or what?!

Comparatives (inversion optional): He has read more articles than have his classmates

Negative conjunct: Never had she seen such a beautiful sight.

Positive rejoinder: So was I.

Goldberg (2006) argues that the SAI constructions exhibit a unified function
The SAI family of constructions

G: Wh-Questions: non-declarative

A: Y/N questions: NON-POSITIVE, non-declarative

I: Exclamatives: non-assertive

B: Counterfactual conditionals: NON-POSITIVE dependent, non-asserted

C: Initial negative adverb clauses: NON-POSITIVE

D: Negative rejoinder: NON-POSITIVE, non-declarative

E: Comparatives: non-topic-comment, dependent

F: Wishes, curses: NON-POSITIVE, non-declarative

H: Positive conjunct clauses: non-predicate focus, dependent

Non-prototypical sentence: NON-POSITIVE, non-predicate focus, non-assertive, dependent, non-declarative

One problematic aspect of this approach is that the category “non-prototypical sentence” has a dubious cognitive/experiential status: as Goldberg concedes, “while we frequently encounter prototypical sentences, we do not encounter ‘non-prototypical sentences’ as instances of a non-prototypical sentence category” (2006: 176–178). Moreover, it seems odd to have negative properties define a prototype as though they were conceptual primitives, with no explicit status in the network for the positive values they depend on. For these reasons, I consider the alternative proposal preferable (see Figure 2), which is to reconstrue the category of SAI as a halo of constructions that...
Notice that sorting SAI from non-SAI is very important for learners

In most instances, only SAI is allowed:
(a) Not until today **did he** take a break.
(b) *Not until today **he did** take a break.

When non-SAI is possible, SAI constructions have the opposite meaning:
(a) For no money **would she** leave.
(b) For no money **she would** leave.
SAI Characteristics

- Prototypical sentence: declarative, positive assertion with predicate-focus information, independent
- In SAI the auxiliary is in the non-canonical position, which tells us the polarity is not canonical either (canonical would be positive)
- SAI is different:
  - Negative or non-positive framing
  - Non-declarative or non-assertive speech acts
  - Narrow-focus or sentence-focus
  - Dependent on other clauses
- A single SAI construction doesn’t necessarily have all of these characteristics at once, but will have some of them; NON-POSITIVE framing dominates

Take-home lesson: Constructions can be taught in families, making the task more coherent, less chaotic
b) An accident waiting to happen and Holistic meaning of constructions

- Constructions often have a holistic, non-compositional meaning.
- A(n) NP waiting to happen: there is nothing in the parts of this construction that would indicate something negative.
- But there is a strong connection with negative events:
  - accident
  - disaster
  - crisis
- And this connection influences the interpretation of neutral words like event.

When a construction forces an interpretation of a component, we call that “coercion”
Coercion by constructions

These constructions might look innocent:

**Ditransitive** (NP V NP NP): *Pat gave Sally the book*

**Caused-Motion** (NP V NP PP): *Sam wiped the crumbs off the table*

**Resultative** (NP V NP AP): *Mary wiped the table clean*

**all over** (+ DP): *John has food all over his face*

**way-construction**: *The soldiers marched their way across Russia*
Coercion by constructions

These constructions might look innocent:

**Ditransitive** (NP V NP NP): *Pat gave* Sally the book

**Caused-Motion** (NP V NP PP): *Sam wiped* the crumbs off the table

**Resultative** (NP V NP AP): *Mary wiped* the table clean

*all over* (+ DP): *John has* food all over his face

*way-construction*: *The soldiers marched* their way across Russia

These constructions can coerce words inserted into their slots to have unusual meanings
Ditransitive (NP V NP NP):
Pat *gave* Sally the book

Gave is inherently ditransitive.
Its frame includes a receiver.
The Ditransitive construction can force receivers upon verbs that do not usually have them:
Pat *kicked* Sally the ball
Pat *baked* Sally a cake

Well, that’s not so amazing, but check out the rest of these constructions....
Caused-Motion (NP V NP PP):
Sam *wiped* the crumbs off the table

This construction can make *intransitive* verbs *transitive*

*Lucy sneezed* the napkin off the table
The audience *booed* the comedian off the stage
Resultative (NP V NP AP):
Mary wiped the table clean

This construction can coerce verbs to take direct objects that they would not otherwise take:
*The tourists drank the pub dry*
*Hank talked himself blue in the face*

This construction can also coerce **adjectives** (Boas 2011):
*Ed hammered the metal flat > Ed hammered the metal safe*

See this context:
*The door of Ed’s old Dodge had a piece of metal sticking out. When getting out of the car, Ed had cut himself on the metal and had to go to the hospital to get stitches. The next day, Ed hammered the metal safe.*
all over (+ DP):
John has **food**
all over **his face**

This construction can coerce **count** nouns to be interpreted as **mass** nouns ("grinding"): 

There’s **cat** all over the road
You’ve got **rabbit** all over your windshield
way-construction: 
*The soldiers marched their way across Russia*

Not only does this construction make intransitive verbs transitive, it can also coerce other verbs to express **motion**:

*Lucy laughed her way out of the room.*
*Robin fought her way through the bureaucracy.*
*Martin bungled his way out of business*
c) *Have a great time and watch your step!* and Polysemy of constructions

The English **Imperative construction**
- an **uninflected verb** form at the beginning
- usually **lacks** overt **subject**
- may include a postverbal element (NP, PP)
- functions as a **directive speech act**
- expresses a particular **illocutionary force**
c) *Have a great time and watch your step!* and Polysemy of constructions

A single construction can have a network of related meanings.

The English **Imperative construction** has these meanings (Stefanowitsch 2003):

**Command:** *Open the door!*

**Request:** *Please pass the salt*

**Instruction:** *Melt the butter in the saucepan*

**Permission:** *Sure, go ahead*

**Warning:** *Watch your step!*

**Good wishes:** *Have a great birthday!*
c) *Have a great time and watch your step!* and Polysemy of constructions

Notice that while these meanings are related in a network, individual meanings can be very different from each other.

- **Command:** *Open the door!*
- **Request:** *Please pass the salt*
- **Instruction:** *Melt the butter in the saucepan*
- **Permission:** *Sure, go ahead*
- **Warning:** *Watch your step!*
- **Good wishes:** *Have a great birthday!*
d) Death by constructions: *Kick the bucket* and *Curiosity killed the cat* and
Idiomaticity vs. schematicity of constructions

Idiomaticity and schematicity are a **continuum**
All constructions lie along this continuum

The **most schematic** constructions:
- have open slots
- few restrictions

The **most idiomatic** constructions:
- have fixed words
- have idiosyncratic syntax
Idiomaticity vs. schematicity continuum

• NP V NP
• *answer the door*
• *the X-er the Y-er*
• *Kick the bucket*
• *Curiosity killed the cat*
• *all of a sudden*
Idiomaticity vs. schematicity continuum

- NP V NP
- answer the door
- the X-er the Y-er
- Kick the bucket
- Curiosity killed the cat
- all of a sudden

Canonical sentence schema, *The girl kissed the boy*

Most idiomatic
Idiomaticity vs. schematicity continuum

- NP V NP
- *answer the door*
- *the X-er the Y-er*
- *Kick the bucket*
- *Curiosity killed the cat*
- *all of a sudden*

slots are open, few restrictions, largely compositional

Most idiomatic
Idiomaticity vs. schematicity continuum

• NP V NP
• *answer the door*
• *the X-er the Y-er*
• *Kick the bucket*
• *Curiosity killed the cat*
• *all of a sudden*

Most schematic
slots are fixed, no grammatical restrictions, partially compositional

Most idiomatic
Idiomaticity vs. schematicity continuum

- NP V NP
- *answer the door*
- *the X-er the Y-er*
- *Kick the bucket*
- *Curiosity killed the cat*
- *all of a sudden*
Idiomaticity vs. schematicity continuum

- NP V NP
- *answer the door*
- *the X-er the Y-er*
- *Kick the bucket*
- *Curiosity killed the cat*
- *all of a sudden*

Most schematic
- slots are open, some restrictions, idiosyncratic syntax

Most idiomatic
Idiomaticity vs. schematicity continuum

- NP V NP
- *answer the door*
- *the X-er the Y-er*
- *Kick the bucket*
- *Curiosity killed the cat*
- *all of a sudden*

Most schematic:
- slots are filled, few other restrictions, canonical syntax

Most idiomatic:
Idiomaticity vs. schematicity continuum

- NP V NP
- *answer the door*
- *the X-er the Y-er*
- *Kick the bucket*
- *Curiosity killed the cat*
- *all of a sudden*

Most schematic

slots are filled, absolute restrictions, canonical syntax
Idiomaticity vs. schematicity continuum

- NP V NP
- *answer the door*
- *the X-er the Y-er*
- *Kick the bucket*
- *Curiosity killed the cat*
- *all of a sudden*

Most schematic

slots are filled, absolute restrictions, idiosyncratic syntax
e) *Give the Red Cross money*, but don’t *Donate the Red Cross money* and Relationships between specific words and constructions

English has **two** constructions to express *transfer* from an actor to a **receiver**:

**Ditransitive:** *Give the Red Cross money*

**To-Dative:** *Bring used clothing to the Red Cross*

*give* and *bring* can be used in both constructions, but they prefer the Ditransitive
Both *meaning* and *experience* are relevant in grammaticality of constructions (Goldberg 2011)

A number of verbs appear in both the Ditransitive and To-Dative constructions:

- *give, tell, bring, teach, send, offer, show, read, lend* etc.

These verbs strongly prefer the Ditransitive (0.04 probability on average)

Some verbs have compatible meanings but occur only in the To-Dative construction:

- *donate, explain, whisper, transfer, entrust, repeat*

These verbs are not expected in Ditransitive

**Statistical preemption:** If a speaker has heard a word only in the To-Dative, they assume it is not grammatical in the higher frequency Ditransitive
Both *meaning* and *experience* are relevant in grammaticality of constructions (Goldberg 2011)

A number of verbs appear in both the Ditransitive and To-Dative constructions:

- *give, tell, bring, teach, send, offer, show, read, lend* etc.

These verbs strongly prefer the Ditransitive (0.04 probability on average)

Some verbs have compatible meanings but occur only in To-Dative construction:

- *donate, explain, whisper, transfer, entrust, repeat*

These verbs are not expected in Ditransitive

In other words: experience trumps meaning

Reasoning: Why would a person use the To-Dative all the time if the Ditransitive is available?
f) What’s with after? I arrived/looked after John and Chunking

How do we know that in the sentence I arrived after John, after refers to time and goes with John, whereas in the sentence I looked after John, after goes with looked to modify the verb to mean ‘take care of’?

This has to do with the fact that constructions are emergent structures

Learners pick up repeated constructions as “chunks” and only gradually make generalizations

look after is a frequent collocation; arrive after isn’t
A construction emerges from a fixed expression in the speech of Naomi (Dąbrowska 2000)

<table>
<thead>
<tr>
<th>Age</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>1;11.11</td>
<td><em>What doing?</em></td>
</tr>
<tr>
<td>1;11.21</td>
<td><em>What’s Mommy doing?</em></td>
</tr>
<tr>
<td>2;0.18</td>
<td><em>What’s donkey doing?</em></td>
</tr>
<tr>
<td></td>
<td><em>What’s Naomi doing?</em></td>
</tr>
<tr>
<td></td>
<td><em>What’s toy doing?</em></td>
</tr>
<tr>
<td>2;0.26</td>
<td><em>What’s Mommy holding?</em></td>
</tr>
<tr>
<td>2;1.19</td>
<td><em>What’s Georgie saying?</em></td>
</tr>
<tr>
<td>2;11.17</td>
<td><em>What is the boy making?</em></td>
</tr>
<tr>
<td>2;11.18</td>
<td><em>What is Andy doing?</em></td>
</tr>
</tbody>
</table>

*(What’s reappears later…)*
A construction emerges from a fixed expression in the speech of Naomi (Dąbrowska 2000)

1;11.11  What doing?
1;11.21  What’s Mommy doing?
2;0.18   What’s donkey doing?
        What’s Naomi doing?
        What’s toy doing?
2;0.26   What’s Mommy holding?
2;1.19   What’s Georgie saying?
2;11.17  What is the boy making?
2;11.18  What is Andy doing?
(What’s reappears later…)
A construction emerges from a fixed expression in the speech of Naomi (Dąbrowska 2000)

1;11.11  What doing?
1;11.21  What’s Mommy doing?
2;0.18   What’s donkey doing?
         What’s Naomi doing?
         What’s toy doing?
2;0.26   What’s Mommy holding?
2;1.19   What’s Georgie saying?
2;11.17  What is the boy making?
2;11.18  What is Andy doing?
(What’s reappears later…)

NP is generalized to names
A construction emerges from a fixed expression in the speech of Naomi (Dąbrowska 2000)

<table>
<thead>
<tr>
<th>Age</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>1;11.11</td>
<td>What doing?</td>
</tr>
<tr>
<td>1;11.21</td>
<td>What’s Mommy doing?</td>
</tr>
<tr>
<td>2;0.18</td>
<td>What’s donkey doing?</td>
</tr>
<tr>
<td></td>
<td>What’s Naomi doing?</td>
</tr>
<tr>
<td></td>
<td>What’s toy doing?</td>
</tr>
<tr>
<td>2;0.26</td>
<td>What’s Mommy holding?</td>
</tr>
<tr>
<td>2;1.19</td>
<td>What’s Georgie saying?</td>
</tr>
<tr>
<td>2;11.17</td>
<td>What is the boy making?</td>
</tr>
<tr>
<td>2;11.18</td>
<td>What is Andy doing?</td>
</tr>
</tbody>
</table>

(What’s reappears later…)
A construction emerges from a fixed expression in the speech of Naomi (Dąbrowska 2000)

1;11.11  What doing?
1;11.21  What’s Mommy doing?
2;0.18   What’s donkey doing?
         What’s Naomi doing?
         What’s toy doing?
2;0.26   What’s Mommy holding?
2;1.19   What’s Georgie saying?
2;11.17  What is the boy making?
2;11.18  What is Andy doing?
(What’s reappears later…)

NP generalized further
What’s > What is
Long-Distance Dependencies (Dąbrowska et al. 2009)

• Long-Distance Dependencies are sentences like:
  – *Who did Pat stammer that she liked?*
  – *What does the funny old man really hope you think?*
• Generativist position is that they are impossible to learn from input
• Corpus research shows that the vast majority of LDDs are of the type
  – *What do you think … ?* as in:
    – *What do you think the funny old man really hopes?*
• In other words, *What do you think … ?* can be learned as a chunk
• Experimental research shows that children acquire lexically specific templates (chunks) and make more abstract generalizations about constructions only later, and in some cases may continue to rely on templates even as adults
g) Czech věřící: how believing became a characteristic and Historical drift

Fried (2015) analyzes the historical development of the present active participle in Old Czech in the direction of an adjective. Three functions are relevant:

a. Predicative: (přišel jsem) věřící ‘(I came) believing’

b. Attributive: věřící člověk ‘a believing person’

c. Nominalized: věřící ‘a believer’

All three functions are attested in Old Czech, but the predicative function (a) became marginalized, attributive and nominalized functions came to dominate Modern Czech.

- Gradual shift of syntactic category from verb (participle) to adjective due to dynamic tension between word meaning and syntactic construction: verbal meaning of the word gets suppressed by the nominal syntactic constructions the participles occur in.
- The locus of the change is the construction, since the shift from verb to adjective cannot be understood without taking the constructions into account.
- Construction Grammar facilitates a precise and explicit analysis of the interaction between lexical meaning and syntactic construction and gradual change over time.
4. Corpus investigation of Constructions

We’ve already seen that corpus data can tell us about constructions:

- Most frequent collocates for *NP waiting to happen*
- Distribution of Ditransitive vs. To-Dative
- LDD mostly attested as *What do you think … ?*

Corpus data is very useful for sorting out factors at work when constructions compete.
Corpus investigations of competing constructions

In Russian there are two constructions to express that something happened in a given decade ‘in the twenties’:

– with the Accusative case: \( v \ dvacatye \ gody \)
– with the Locative case: \( v \ dvacatyx \ godax \)

Nesset and Makarova have discovered that there has been a language change, and the accusative case is now the norm
Percentage of accusative case in Russian “decades construction” over time
Corpus investigations of competing constructions

• In Russian, there are two constructions for expressing 2, 3, or 4 things modified by an adjective:
  – with the adjective in the genitive plural and the noun in the paucal
    • *tri malen´kix stolika* ‘three little tables’
  – with the adjective in the nominative plural and the noun in the paucal
    • *tri malen´kie stolika* ‘three little tables’
• Most textbooks teach only the genitive plural construction
• But Nesset and Nordrum have discovered that there is a language change going on and that gender is becoming the deciding factor, with masculine and neuter nouns preferring the genitive construction and feminine nouns preferring the accusative construction
Genitive vs. Nominative plural Adjectives with numerals 2, 3, 4 in Russian over time
5. Experimental investigation of Constructions

Kuznetsova and Nesset (2015) did an experiment on the factors that decide between a genitive construction and an accusative construction for a group of verbs:

- *slušat´sja* ‘obey’, *dožidat´sja* ‘wait for’, *bojat´sja* ‘fear’, *dostigat´* ‘reach’, *izbegat´* ‘avoid’

Corpus data give evidence of a language change (genitive > accusative) and of significant factors relating to individuation of the direct object.

An experiment made it possible to sort out the contributions of various factors.

The experiment also showed that declension was an important factor:

III declension nouns are dispreferred in the accusative construction.

For example, participants avoided the accusative construction with the III declension proper name *Ljubov´* (only 8% acceptance), whereas accusative is preferred for II declension names *Ol´ga*, *Nina*.
Importance of variables

MeanDecreaseGini

animacy  declension  word order  proper vs. common
6. Constructicons for learners

A language is the aggregate network of constructions (Goldberg 2006)
= a “constructicon”

Constructicons are currently under development for English, Brazilian Portuguese, German, Japanese, Russian, and Swedish

Abstract from Lyngfeldt et al.

“A constructicon is on the one hand a theoretical conception of language as a structured inventory of constructions, and on the other hand a systematic collection of construction descriptions, essentially a practical instantiation of the former concept. Practical constructicon development is characterized as a combination of construction grammar and lexicography, for which we introduce the term constructicography.”
Demo of Russian constructicon

http://spraakbanken.gu.se/karp/#?mode=konstruktikon-rus
Example entry from the Russian constructicon

NAME
60_километров_в_час – два раза в день, 60 километров в час

DEFINITION

STRUCTURE
[NP [NumP NP]] в NPassc

EXAMPLES

COMMENT
В письменной речи обозначается также как <i>60 км/ч</i>. Обратите внимание, что расход топлива обозначается с помощью другой конструкции (ср. <i>семь литров на 100 километров</i>).
References


Dąbrowska 2000

Dąbrowska et al. 2009


Goldberg 2011

Stefanowitsch 2003