Introduction to Cognitive Linguistics

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1 History of Cognitive Linguistics

- Founded in 1989
  - Conferences
  - Journal
  - Handbooks
- Precursors
  - Eleanor Rosch
  - Charles Fillmore
  - George Lakoff
- Ronald Langacker
- Other major players
conferences:
• Duisburg, Germany 1989
• Santa Cruz, CA 1991
• Leuven, Belgium 1993
• Albuquerque, New Mexico, 1995
• Amsterdam, Netherlands 1997
• Stockholm, Sweden 1999
• Santa Barbara, CA 2001
• La Rioja, Spain 2003
• Seoul, Korea 2005
• Krakow, Poland 2007
• Xi’an, China 2011
• Edmonton, Alberta, Canada 2013
• Newcastle, UK 2015
• “Tier I” (Nivå 2) International journal since 1990
• Currently edited by John Newman (U Alberta)
Handbooks of Cognitive Linguistics


Eleanor Rosch (Psychology): Structure of human cognitive categories

• Showed that human cognitive categories are not Aristotelian categories, but instead have:
  – Prototypes
  – Radial structure of categories
• Confirmed for structure of existing categories (fruits & vegetables), for building of new categories (color), and for inferencing (birds)
• Inspired many works in linguistics that laid the groundwork for cognitive linguistics
  – Fillmore, Kay, McDaniel, Coleman, Lakoff (Rosch1973a-b, 1978; Mervis and Rosch 1981)
Early works in linguistics inspired by Rosch

• Charles Fillmore 1975, 1978, 1982:
  – questions necessary & sufficient features for describing meaning >> replaced by radial categories/frame semantics
• Kay and McDaniel 1978
  – On the linguistic significance of the meanings of basic color terms
• Coleman and Kay 1981
  – English *lie* as a prototype (+falsehood is actually the least predictive “feature”)
• George Lakoff 1977
  – Linguistic gestalts
Other precursors of cognitive linguistics

• Lakoff & Johnson 1980: Metaphors We Live By
  – Ubiquity of metaphor – not just a literary device
• Sue Lindner 1981: UP and OUT
  – structured polysemy of grammatical morphemes, metaphor
• Eugene Casad 1982: Cora locationals
  – spatial relations and their extensions
• Gilles Fauconnier 1985: Mental Spaces
  – Idealized Cognitive Model as alternative to “possible worlds” – a situation may hold true for a mental space but not for reality
• George Lakoff 1987: Women, Fire and Dangerous Things
  – radial category structure of linguistic units
• Claudia Brugman 1988: Story of OVER
  – polysemy, semantics, and the structure of the lexicon
No single “guru”, but Ronald W. Langacker stands out

Grammar and Conceptualization (1999)
Essentials of Cognitive Grammar (2013)
- Construal
- Profiling
- Symbolic Structures and Symbolic Assemblies
- Elaboration
- Subjectification
Some other major players

- William Croft: Radical Construction Grammar, Verbal aspect
- Ewa Dabrowska: Acquisition (chunking), non-uniform grammars
- Dirk Geeraerts: Sociolinguistic variation, historical change
- Adele Goldberg: Construction grammar
- Len Talmy: Fictive motion, limits of grammatical expression (topological vs. Euclidean), sattelite vs. verb framing
- John Taylor: Linguistic categorization, possession
- Michael Tomasello: Verb-island hypothesis, joint attention, language evolution
- Mark Turner: Blending
2 Cognition and Language

- cognitive linguistics makes a minimum of assumptions
- linguistic facts should be explained with reference to general cognitive mechanisms otherwise established by neurobiologists and psychologists
- language is built from actual usage events ("performance")
Occam's Razor: No more things should be presumed to exist than are absolutely necessary, i.e., the fewer assumptions an explanation of a phenomenon depends on, the better the explanation.

(William of Occam)
What cognitive linguistics does NOT assume:

**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
  - differences in behavior are motivated (but not specifically predicted) by differences in meaning
  - metaphor and metonymy play a major role in grammar
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**
Some General Cognitive Mechanisms

- Perception, selective focusing of attention
  - construal, profiling
- High connectivity, overlapping functions
  - radial category structure
  - redundancy
- Mapping, connections between neural nets
  - metaphor
  - metonymy
  - blending
3 The Status and Source of Meaning

- **Meaning** underwrites the existence of all linguistic units and phenomena, none of which are semantically empty.
- **Grammar is an abstract meaning structure** that interacts with the **more concrete meanings of lexicon**.
- Meaning is grounded in the **shared human experience** of bodily existence.
- All experience is filtered by **perception**; as a consequence language is not a description of the real world, but rather a **description of human perception** of reality.
- The same event of objective reality may be **differently construed** by different speakers or even by the same speaker in different utterances.
What is embodied experience?

- Human beings have a body with certain perceptual and other characteristics: SELF vs. OTHER
- We experience gravity: UP vs. DOWN; BALANCE
- We are containers: IN vs. OUT
- We encounter objects: COUNT vs. MASS, FIGURE vs. GROUND
- Our bodies have symmetries/asymmetries: FRONT vs. BACK, LEFT vs. RIGHT
- We sense distance: NEAR vs. FAR
- We sense heat, light, pain, hunger, fear, etc.
- We have control over our movements, eye-hand coordination, volition, etc. SOURCE-PATH-GOAL
- We experience the flow of time
Embodied experience serves as the basis for grammatical categories

- Meanings of cases and prepositions
- Tense
- Aspect
- Modality
- Person
- Number
- Possession
- … and many others
Our embodied experience

...is reflected in the dynamic connections in our brains
One example of the relationship between experience and the brain

The primary motor cortex of the brain contains a "map" of the body
Mirror neurons

- Observation of an action automatically triggers simulation of that action in the brain
- Neurons in the premotor cortex fire during both goal-directed actions and the observation of such actions
- Mirror neurons provide a neural basis for imitation and empathy (inner imitation)
Construal in a lexical item

- Russian: *osminog* [eight-legs]
- Czech: *chobotnice* [elephant-trunk-object]
- Norwegian: *bleksprut* [ink-squirter]
Construal in grammar

- Harry stole John’s wallet.
- John’s wallet was stolen by Harry.
- John’s wallet was stolen.
- A theft occurred.
Construal in Russian grammar

... odin iz ego djadej byl učitelem matematiki v škole.
‘... one of his uncles was a mathematics teacher.INST in a school.

U menja tol’ko papa byl xorošij, on byl učitel’...
‘... my father was the only good one, he was a teacher.NOM...’
When I am an old man. 

I will read old books and press young wine 

When I am an old man. 

I will at last be certain of who I want to love 

I will buy myself parchment and a brush and ink 

and like a Chinese wise man I will sit down at the river bank and 

I will be an old man.
Ja u vas uže odnaždy sprašivala, vlijajut li antibiotiki na obrazovanie antitel k VIČ. Vy otvetilit, čto net. I teper’ u menja ešče odin vopros…

‘I asked.IMPF you already whether antibiotics have an effect on the formation of AIDS antibodies. You answered no. And now I have another question…’

Ja u vas uže sprošila, kakova celesoobraznost’ vyskazyvania moego menija zdes’?

‘I asked.PF you already, what is the point in expressing my opinion here?’
4 The Structure and Extension of Meaning

- Human categorization uses radial categories, not Aristotelian categories
Furniture for sitting
If you speak English, your chair category looks like this:

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

- **solseng**
- **gyngestol**
- **barnestol**
- **stol**
- **lenestol**
- **rullestol**
If you speak Czech, your category is:

- lehátko
- židlička
- invalidní vozík / kolečkové křeslo
- houpácí židle
- židle
- křeslo
Russian has two different categories:
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
Which two items belong together?
How many of you chose this solution?
How many of you chose this solution?
Why did you choose the solution you did?

English: chair
Czech: křeslo (židle?)

English: wheelchair
Czech: invalidní vozík / kolečkové křeslo

English: cart
Czech: vozík = ‘cart’
Think of all the ways that you could describe where the apples are
A: The apples are inside-bowl
B: The apples are loose fitting-bowl
C: The apples are concave valley that faces me-bowl
D: The apples are stomach-bowl
The take-home lesson about apples:

- Meaning is based on embodied experience
- Meaning is also present in “grammatical” phenomena such as functor words (like pre- and post-positions) and case
  - Because the lexicon and grammar are a continuum
- Different languages can recruit different embodied experiences for this purpose:
  - Container vs. Surface, Tight vs. Loose fit, Topography, Body parts, etc.
You are inside a house. Suddenly a dog appears, moving very rapidly through the door. How could you describe what the dog did?
El perro entró corriendo

Hunden løp inn
The take-home lesson about dogs:

- Meaning can be represented differently in different grammars

  - Verb-framed languages (like Spanish) focus on the path of motion, and the manner of motion is expressed optionally, as an adverbial

  - Satellite-framed languages (like Norwegian) focus on the manner of motion, and the path is expressed in a particle or prefix
Some examples of linguistic categories that have the shape of radial categories:

– Russian prefix *raz-*
– Czech dative case
– North Saami postposition *čađa*
Russian has:
- 1429 simplex verbs
- that form 1981 Natural Perfectives
- using 16 prefixes

• Distribution of so-called “empty” prefixes
The schematic idea of raz-: APART, as in RAZojtis’ ‘walk in different directions’

John Cleese in the Monty Python sketch “Ministry of silly walks”
Russian RAZ-:
Radial Category

1. APART
SP (38) raz-pilit ‘saw apart’
NP (22) raz-gryzt ‘gnaw apart’

2. CRUSH
SP (7) raz-toptat ‘trample’
NP (5) raz-davit ‘crush’

3. SPREAD
SP (30) raz-katat ‘roll out’
NP (17) raz-vetvit’sja ‘branch out’

4. SWELL
SP (3) raz-dut ‘inflate’
NP (9) raz-puxnut ‘swell’

5. SOFTEN / DISSOLVE
SP (7) raz-tvorit’sja ‘dissolve’
NP (6) raz-tajat ‘melt’

6. EXCITEMENT
SP (29) raz-kalit ‘make red-hot’
NP (16) raz-gorjačit ‘heat up, irritate’

7. UN-
SP (38) raz-gruzit ‘unload’
The Czech Dative Case

Schematic idea:
A Dative entity is a potential subject, capable of a further action
The Czech Dative Case: Three Major Nodes

Dative: a receiver
(Indirect Object, etc.)

Dative: an experiencer
(Benefit, Harm, etc.)

Dative: a competitor
(Matched Forces, Submission, etc.)
Radial Categories Within the Radial Category
Dative: a receiver

- **Giving messages:** vyprávět ‘narrate’, kondolovat ‘express condolences’
- **Giving:** dát ‘give’, poslat ‘send’, objasnit ‘explain’
- **Giving self:** představit se ‘introduce oneself’, věnovat se ‘devote oneself’
- **Taking:** vzít ‘take’, ukrást ‘steal’
- **Taking self:** utéci ‘run away’, chybět ‘be lacking’
Radial Categories Within the Radial Category

Dative: an experiencer

Age, environment, emotions, need: Kolik je vám let ‘how old are you’, je mi zima ‘I feel cold’, je nám líto ‘We feel sorry’, je ti to třeba ‘do you need that’

Benefit: prospět ‘benefit’, slušet ‘suit’

Harm: ublížit ‘harm’, vadit ‘bother’

Possession: umýt si ruce ‘wash one’s hands’, zlomit si nohu ‘break one’s leg’
Radial Categories Within the Radial Category
Dative: a competitor

**Submission:** podrobit se ‘submit to’, pokořit se ‘surrender’

**Matched Forces:**
- podobat se ‘be similar’
- rovnat se ‘be equal’

**Domination:**
- vládnout ‘govern’
- vévodit ‘rule over’
North Saami postposition čađa ‘through’
North Saami postposition čađa ‘through’

Means: Girjji sáhtát diŋgot Davvi Girji o.s. čađa ‘You can order the book through Davvi Girji o.s.’

Metaphorical motion: Son lea jođihan ohppiid álgooaahppokurssa čađa ‘He had led the students through the introductory course’

Motion: viehkaliı vuovdde čađa ‘he ran through the forest’

Fictive motion: E6-bálggis manná suohkana guovddáš osiid čađa ‘The E-6 highway goes through central parts of the municipality’

Extent: bálggis vuovdde čađa ‘a path through the woods’

Time: Luohti lea rievdan ollu áiggiid čađa ‘The joik has changed a lot through time’

Metonymic time: guhkes musihkka bihtáid čađa ‘through the long musical pieces’
5 Mental Spaces and Mapping: Metaphor, Metonymy, and Blends

- **Metaphor**: mapping from source domain to target domain
  - **Orientational metaphor**: the extension of orientations such as IN/OUT, UP/DOWN, FRONT/BACK to non-spatial domains
  - **Ontological metaphor**: the conceptualization of non-things as if they were things, as in *We are working toward peace*, or *His emotional health has deteriorated recently*
  - **Structural metaphor**: takes an item with rich structure in bodily experience as the source domain for understanding something else. For example, PEOPLE ARE PLANTS in children *sprouting up*, youth as a *blossom*, old age as a time of *withering and fading*, and the slaughter of soldiers as being *mowed down*. 
Orientational metaphor in Russian grammar
Use of prepositions, case to describe non-spatial domains:

• v tri časa ‘at three o’clock’
• do odinnadcati ‘by 11’
• otvetstvennost’ pered sudom ‘responsibility before the court’
• čerez nedelju ‘in a week’
• otvetit’ na ego vopros ‘answer his question’
• zaplatit’ štraf za čto-to ‘pay a fine for something’
• k utru ‘toward morning’
Structural metaphor in Russian grammar

• Discrete Solid Object:

  Perfective verbs

• Fluid substance:

  Imperfective verbs
Temporal Metaphors from General to Specific:

- **TIME IS SPACE** (well-documented, cf. Haspelmath 1997)

- **A SITUATION IS A MATERIAL ENTITY** (cf. comparisons of perfective vs. imperfective to count vs. mass)

- **PERFECTIVE IS A DISCRETE SOLID OBJECT** vs. **IMPERFECTIVE IS A FLUID SUBSTANCE**
### A. Edges

<table>
<thead>
<tr>
<th>Perfective</th>
<th>Imperfective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has edges</td>
<td>Has no edges</td>
</tr>
<tr>
<td>Односельчане нашли его мертвым.</td>
<td>На стульях и кровати лежали вещи, вынутые из сундука.</td>
</tr>
<tr>
<td>‘The fellow-villagers found him dead.’</td>
<td>‘On the chairs and bed lay things that had been taken out of the trunk.’</td>
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# B. Shape

## Perfective

- Can have various shapes
- я написал роман
  - ‘I’ve written a novel’
- можно посидеть за столом
  - ‘one can spend some time sitting at the table’
- Ее муж умер
  - ‘Her husband died’

## Imperfective

- Has no shape but can spread
- Он носил галстук
  - ‘He was wearing a tie’
- Я работаю здесь с прошлого года
  - ‘I have been working here since last year’
- Телевидение делает мир плоским
  - ‘Television makes the world flat’
### C. Integrity

<table>
<thead>
<tr>
<th>Perfective</th>
<th>Imperfective</th>
</tr>
</thead>
<tbody>
<tr>
<td>A unique occurrence</td>
<td>Continuous processes and repetitions</td>
</tr>
<tr>
<td>Он нашел позвонок мамонта</td>
<td>она готовилась к экзаменам</td>
</tr>
<tr>
<td>‘He found the vertebra of a mammoth’</td>
<td>‘she was preparing for exams’</td>
</tr>
</tbody>
</table>

я каждодневно сталкиваюсь с людьми
‘I daily encounter people’
### D. Countability

<table>
<thead>
<tr>
<th>Perfective</th>
<th>Imperfective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantified</td>
<td>Not inherently quantified, can fill</td>
</tr>
<tr>
<td><em>Борис прочитал</em> эту книгу за два часа.</td>
<td><em>Она поджидала</em> мужа ночами.</td>
</tr>
<tr>
<td>‘Boris <em>read</em> that book in two hours.’</td>
<td>‘She <em>waited up</em> for her husband during the nights.’</td>
</tr>
</tbody>
</table>
E. Streamability

**Perfective**

Gestalt

Он увлекся выращиванием грибов.

‘He became mad about cultivating mushrooms.’

**Imperfective**

Gradual accumulation

Во мне накапливался протест

‘A feeling of protest welled up in me.’

determined vs. non-determined motion verbs

ехать vs. ездить

‘ride’, идти vs. ходить

‘walk’, etc.
F. Penetrability

Perfective

Imperfective

descriptions of manner

Полицейские крепко держали его за плечи.

‘The policemen held him firmly by the shoulders.’
### G. Conversions

<table>
<thead>
<tr>
<th>Perfective</th>
<th>Imperfective</th>
</tr>
</thead>
<tbody>
<tr>
<td>–ну- singularization</td>
<td>pulverization</td>
</tr>
<tr>
<td>прыгать\textsuperscript{i} ‘jump\textsuperscript{i}’ vs. прыгнуть\textsuperscript{p} ‘jump (once)\textsuperscript{p}’</td>
<td>они медленно выбирал\textsuperscript{i} себе наряды ‘they were slowly choosing\textsuperscript{i} their outfits’</td>
</tr>
</tbody>
</table>
H. Compatibility

Perfective
Sequencing and future
Когда отец проснулся^{p} и встал^{p} и вышел^{p} из шалаша, он спросил^{p} нас…
‘When father awoke^{p} and got up^{p} and went out^{p} of the cabin, he asked^{p} us…’
Завтра получу^{p} письмо
‘I will receive^{p} the letter tomorrow’

Imperfective
Simultaneity and present
Девушка смотрела^{i} в окно, и в ее светлых глазах отражались^{i} деревья, дома, небо.
‘The girl was looking^{i} out the window and trees, houses, and the sky were reflected^{i} in her bright eyes.’
Сейчас работаем^{i} над новым меню
‘Right now we are working^{i} on a new menu’
I. & J. Dynamicity & Salience

Perfective
moves story along

Imperfective
slows story down
My father was born in St. Petersburg in 1911. When WWI began, it became hard to live in Petersburg, and the whole family left for the village of Pominovo in the Tver’ region, for our grandmother’s homeland. The house where they lived, by the way, still stands to this day, and the relatives go there for vacations. In that same place, in Pominovo, my father met my mother. They got married when they were 17 years old.
Further metaphorical contrasts of Perfective vs. Imperfective in Russian...

- **K. Contiguity**
  - *Phasal verbs followed by imperfective infinitives, Ingressives, Terminatives*
- **L. Stability**
  - *Perfective verification of contract, Gnomic satisfaction potential, New instructions, Frustration*
- **M. Texture**
  - *Specific threat, Generalized guideline, Polite situations*
- **N. Implied conversions**
  - *Firm success vs. conative attempts, Annulled event*
Metonymy

- **Metonymy**: when a source item stands in for a target item, a relationship of contiguity

- **Lexical metonymy**: *The ham sandwich wants his check. The White House has called for budget reforms.*

- **Metonymy in grammar**: ellipsis, truncation, and phonological reduction/neutralization; endpoint metonymy in *Bill lives over the hill*; metonymy in word-formation
Metonymy in Russian grammar

• Semelfactives:
  – čixat’ ‘sneeze’ > čixnut’ ‘sneeze once’

• Dative case:

• Word-formation:
  – brjuxo ‘belly’ > brjuxan ‘person with a big belly’
Conceptual integration from two inputs:

- work + alcoholic = workaholic
- motor + hotel = motel

Blending [http://markturner.org/blending.html](http://markturner.org/blending.html)
6 Construction Grammar

- Constructions (pairings of form and meaning) are THE units of language
- Constructions are not necessarily strictly compositional
- A language is a “constructicon”
- “It’s constructions all the way down.” (Goldberg 1995)
What is a construction?

• “a conventionalized pairing of form and meaning”
• This works at many levels simultaneously -- “it’s constructions all the way down”
• Any given utterance contains many constructions
• Constructions are not componential, meaning can be wholistic/emergent, though some items can be put in slots

• Speaker’s knowledge of language consists of systematic collections of form-function pairings that are learned on the basis of the language they hear around them.

• The usage-based model of grammar is supported not only by linguistic facts, but also by what we know about how non-linguistic categories are represented.

• Far from being an arbitrary collection of stipulated descriptions, our knowledge of linguistic constructions, like our knowledge generally, forms an integrated and motivated network.

• Child learners can: make statistical generalizations, use semantics and pragmatics for making interpretations and generalizations.

• Constructions can be learned, and learned quickly, on the basis of the input.
William Croft’s
Radical Construction Grammar 2001

- Idiomaticity is a cline
- Syntax is semantically motivated
- Linguistic categories ("adjective", "passive", "dative") are language-specific
- No strict universals, but some tendencies
- "Simpler", "more elegant" solutions are not necessarily best
- Constructions are the minimal units; pairings of form and meaning
- The only syntactic relations required are meronomic (part-whole)
7 The Quantitative Turn in Cognitive Linguistics

We will go into details in tomorrow’s lecture

• Digital corpora
• Statistical software
• Linguistically interesting questions