Constructional approaches to language

- way of thinking about language & representing speakers' linguistic knowledge

- Basic questions:
  - How do language users know what anything means?
  - What is the nature of speakers' linguistic knowledge that allows native-like fluency in language use?

Constructional approaches to language

- non-monolithic
  - Charles J. Fillmore (Fillmore 1988, 1989; Fillmore, Kay & O'Connor 1988, Lambrecht 2004, Fried & Boas 2005, Fried 2007, etc.)
  - Adele Goldberg (issues of argument structure)
  - William Croft (Radical Construction Grammar)
    - connection to cognitive linguistics & typology
  - Paul Kay & colleagues (focus on formal syntax)
    - connection to HPSG
  - 'Construction Grammar+' (Fried & Östman 2004, 2005, Östman & Fried 2005, Fried 2008, 2009, To appear-a, Torres Cacoullos & Nikiforidou 2010…)
    - Fillmorean version, incorporating communicative aspects of linguistic structure; own semantic theory (Frame Semantics)

Basic assumptions

- Language
  - … is a learnable cognitive system, internally structured
  - … provides means for encoding and decoding novel utterances
- and more specifically:
  - … complex symbolic tool for **communication**
  - … with a perceptual/experiential basis (constructions as 'Gestalts')
  - … grammatical structure evolves from usage

→ study of **words** in their syntagmatic and semantic **context**

Methodology

- Inductively oriented:
  - emphasis on empiricism
  - authentic material (corpus evidence)
  - increasing emphasis on quantitative methods
  - role of context in adequate grammatical descriptions & representations

Motivation

- 'meaning' in grammar, esp. semantic roles (Fillmore's 1968 "Case for Case")

→ two layers in sentence structure:

"case frames" → Construction Grammar + "valence" → Frame Semantics

- **categoriality**
- **combinatorial** properties
- **partial productivity**

Motivation: categoriality

- ex. from **English adjectives**:

  attributive vs. **predicative**

___ N	X is ___
good sandwich	*good*
utter, mere, main	*glad, afraid, awake…*
late$_1$	*late*$_2$

- **Czech cardinal numerals**: Num / Adj / N ?

	# = (1,2),3,4	# = 5 & more
N, A	*Jsou tu / mám tři*$_{\mathbf{N/A}}$ *děti*$_{\mathbf{N/A}}$	*Je tu / mám pět*$_{\mathbf{N/A}}$ *dětí*$_{\mathbf{G}}$
G	… *od tří*$_{\mathbf{G}}$ *dětí*$_{\mathbf{G}}$	… *od pěti*$_{\mathbf{G}}$ *dětí*$_{\mathbf{G}}$
D	… *třem*$_{\mathbf{D}}$ *dětem*$_{\mathbf{D}}$	… *pěti*$_{\mathbf{D}}$ *dětem*$_{\mathbf{D}}$
L	… *o třech*$_{\mathbf{L}}$ *dětech*$_{\mathbf{L}}$	… *o pěti*$_{\mathbf{L}}$ *dětech*$_{\mathbf{L}}$
I	… *se třemi*$_{\mathbf{I}}$ *dětmi*$_{\mathbf{I}}$	… *s pěti*$_{\mathbf{I}}$ *dětmi*$_{\mathbf{I}}$

agreement patterns:

for # 1,2,3,4	[$\#_{case\ i}$ $Noun_{case\ i}$]	i = any case	→ Adj
for # 5 & more	[$\#_{case\ i}$ $Noun_{case\ i}$]	i = **G,D,L,I**	→ Adj
	[$\#_{case\ i}$ $Noun_{GEN}$]	i = **N,A**	→ N

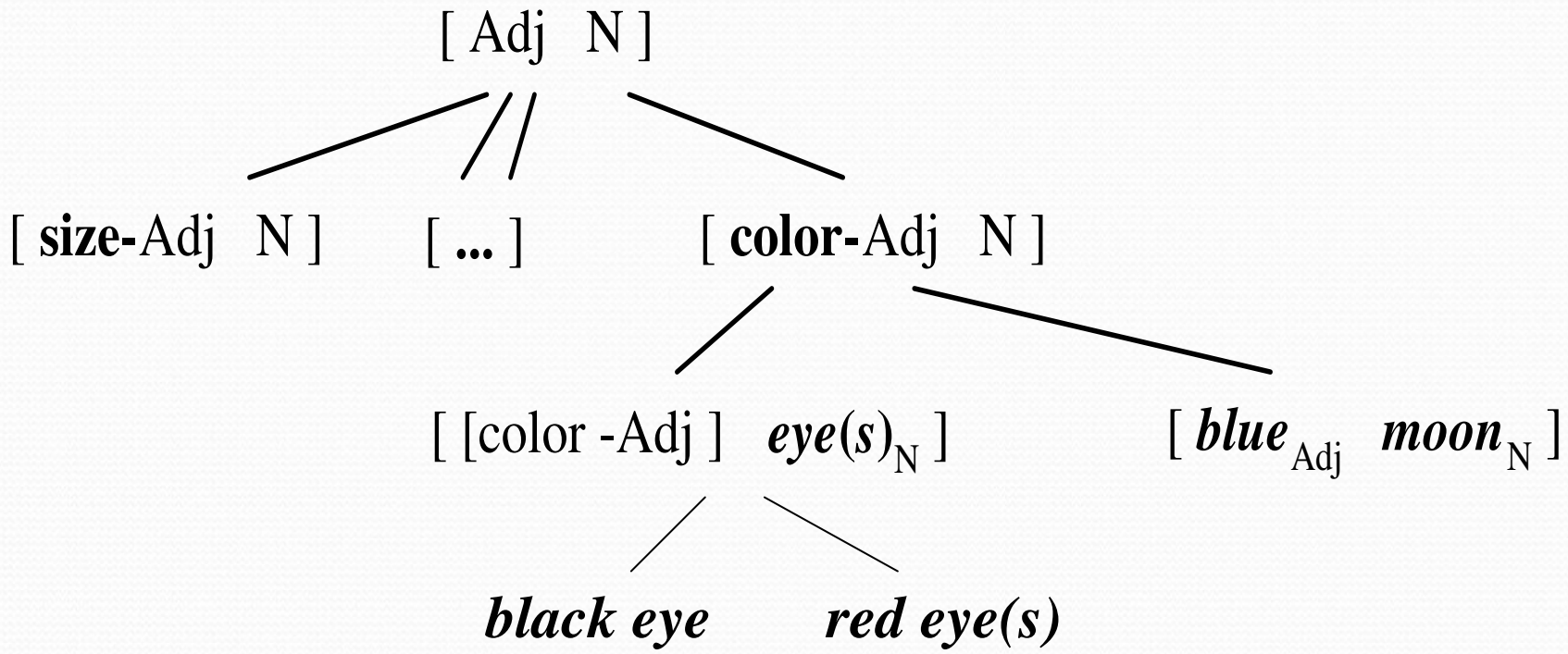
Motivation: combinatoriality

- ex. from **English adjectives - scalarity**:

<u>degree on a scale</u>			→ VERY
tall, heavy, old, dark…			
		<u>end of scale</u>	→ ABSOLUTELY
tired	vs.	*exhausted*	
tasty		*delicious*	
interesting		*fascinating*	
large/big		*huge*	
hungry		*famished…*	

Motivation: partial productivity

e.g. *blue ink – blue eyes – blue moon*



Motivation: partial productivity

- **as A as N** pattern

(1) *Jack is **as** old **as** my brother.* — Lit. *as* A *as* N

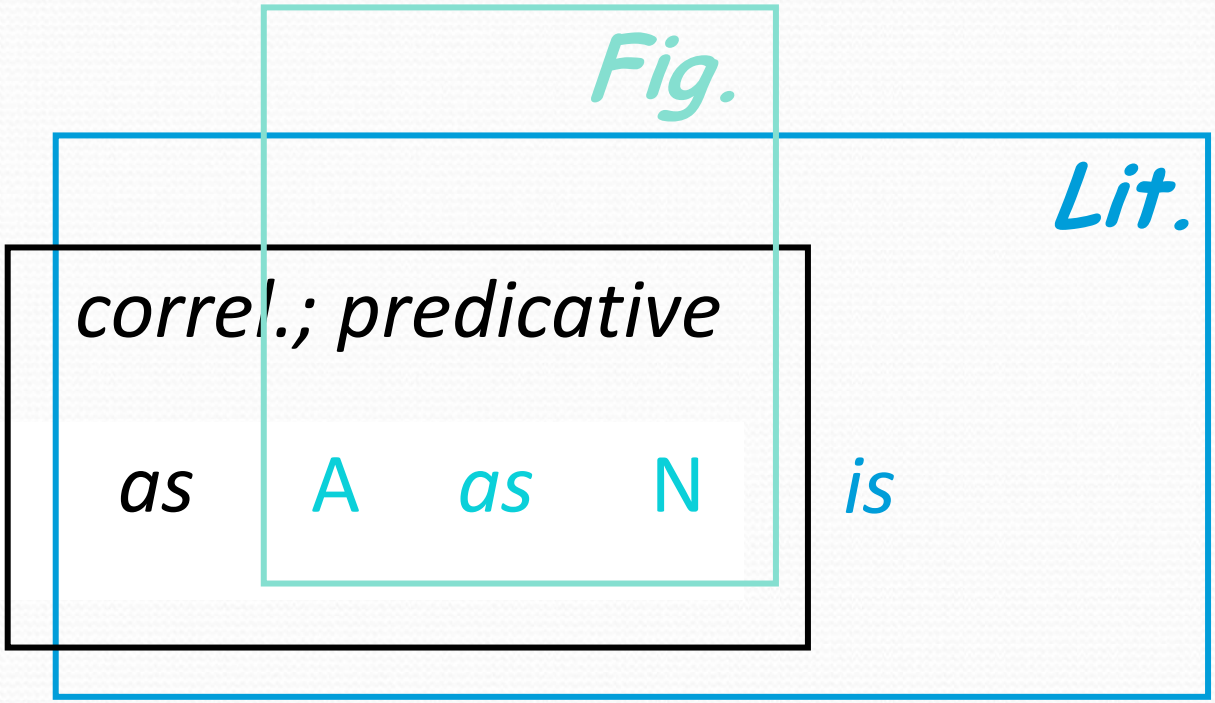
(2) *Jack is **as** fat **as** an ox.* — Fig. *as* A *as* N

(3) *Jack is **as** old **as** my brother is.* — *as* A *as* N *is*

(4) *Jack is fat **as** an ox *is.* — A *as* N

(5) **Jack is old **as** my brother (is).* — *_ A *as* N ***is***

Network of related constructions



Lexicon-grammar continuum

Degree of schematicity:	Examples:
- fully filled & fixed	*blue moon, by and large, children*
- fully filled & partially flexible	*go*[tense] *postal*, *hit*[tense] *the road*
- partially filled	*as* [Adj] *as* [N] [time expression] *ago* adj-*ly* (e.g. *richly, happily*)
- fully schematic	$[V\ \ NP]_{VP}$, $[NP\ VP]_S$ $stem_V$-TNS (e.g. *walk-ed*, *smell-ed*)

The notion of 'construction'

- traditional usage: 'syntagmatic string'
- **construction** in CxG
  - basic unit of analysis
  - applies to linguistic units of any size or internal complexity (morphological units, words, phrases, clauses, turns, etc.)
  - a symbolic sign – i.e., a conventional association between form and function
  - *multidimensional* object that represents a hypothesis about speakers' linguistic knowledge
  - licenses well-formed linguistic expressions

Rules vs. constraints

Can I change[the reservation]that[my colleague]made?

Constructions that **license** this construct:

(a) Subject-Auxiliary Inversion

(b) Restrictive Relative Clause

(c) Subject-Predicate

(d) Determination

(e) Transitive (linking)

(f) VP

Plus: lexical constructions (*can, I, change...*)

Major features of CxG:

- **constructions** versus **constructs**:
  - *construction* = piece of grammar; abstraction
  - *construct* = actual linguistic expression
- **external** vs. **internal** properties of constructions:
  - *external* = a set of constraints on how a given unit fits in larger grammatical patterns
  - *internal* = requirements placed on the construction's constituents
- **non-compositionality** of constructions:
  - constructions are "pairings of form and meaning that are at least partially arbitrary" (Croft 2001:18)
- no sharp distinction between **grammar** and **lexicon**

Notational conventions

- hierarchical relations in **nested boxes**

syn	[syntactic & categorial properties]
prag	[pragmatics & information-structure specifications]
sem	[semantics of the construction]
val	{ arguments and adjuncts required by the construction }
phon	[phonological & prosodic properties of the construction]

role	head
syn	(usually matches external syntax)
prag	[pragmatics of the head]
sem	[semantic properties of the head]
val	{ valence requirements of the head }
phon	[phonol. & prosodic properties of the head]
lxm	[specific lexeme]

role	filler
syn	...
prag	...
sem	...
	etc.

+

- **attribute-value pairs**, organized in attribute-value matrices (AVMs)

	Attribute	***Values***
Syntactic domain:	lexical category	N, Adj, V, P, …
	finiteness	+/- (or fin / non-f)
	grammatical function	subj, obj, obl, …
Semantic domain:	number	sg / dual / pl/ …
	definiteness	+/-
	semantic role	agent, patient, theme, …
Prosodic domain:	prosodic constituent	word, phrase, clitic, …
	intonation	falling, …
	stress	primary / secondary / null
Pragmatic domain:	activation in disc.	null / active / accessible
	register	formal / informal

… and attributes for socio-pragmatic information (when needed) (Fried & Östman 2005: 1774)

	Possible values:
Coherence:	
• type of speech act	question / request / assertion / etc.
• speaker information (sex, age…)	e.g., M / F
• shift of discourse topic	Yes (-> new topic) No (-> keep old topic, or specification not relevant)
• expectations vis-à-vis hearer	Yes (a response; specific response) No
Politeness:	
• power ~ solidarity	formal / informal
• tact	distance / deference / camaraderie
Involvement/expressiveness:	
• involved	+/-
• intonation	{ different contours }

… and AVMs in boxes…

- matching values across attributes:
  - $[\text{attr}_1 \quad x\,] \qquad [\text{attr}_1 \quad x\,]$
  - $[\text{attr}_1 \quad x\,] \qquad [\text{attr}_1 \quad [\ ]\,] \quad \text{or} \quad [\text{attr}_1\,[\ ]\,] \;\; [\text{attr}_1\; x]$
- mismatches between external and internal specifications

$$\begin{array}{ll} \text{attr}_i & x \\ \text{attr}_j & yy \\ \text{attr}_k & z \\ \boxed{\begin{array}{ll} \text{attr}_i & x \\ \text{attr}_j & y \end{array}} & \end{array}$$

Noun Phrases

- some nominal **constructs**:

  much snow

  the book

  a town

  * *much book*

  * *a snow*

  …

- what is the **construction** that licenses them?

syn [cat n, proper -, max +, lex -] sem [cnfg mass, num sg, bounded +]

syn [cat art, max -, lex +]

sem [frame [...], cnfg mass, num sg, bounded -]

lxm *much*

syn [head [cat n, proper -], level [max -, lex +]]

sem [frame [...], cnfg mass, num sg, bounded -]

lxm *snow*

much snow

syn [...] sem [...]

syn [...]

sem [frame [...], cnfg mass, num sg, bounded -]

lxm *much*

syn [...]

sem [frame [...], cnfg count, num sg, bounded +]

lxm *book*

* *much book*

syn [...] sem [...]

syn [...]	syn [...]
sem [frame [THE], cnfg mass, num sg, bound -]	sem [frame [SNOW], cnfg mass, num sg, bound -]
lxm *the*	lxm *snow*

the snow

syn [...] sem [...]

syn [...]	syn [...]
sem [frame [THE], cnfg count, num sg, bound +]	sem [frame [BOOK], cnfg count, num sg, bound +]
lxm *the*	lxm *book*

the book

Lexical specifications of *the* and *much*

THE

syn	cat	art	sem	frame [...]
	max	-		cnfg [ ]
	lex	+		num [ ]
				bounded [ ]
lxm	*the*			

MUCH

syn	cat	quant	sem	frame [...]
	max	[ ]		cnfg mass
	lex	+		num sg
				bounded -
lxm	*much*			

English Determination construction

Determination

syn [cat n; proper -; max +; lex -]

sem [frame ↓4, ↓5 [...]; cnfg #1[ ]; num #2[ ]; bounded +]

role det

sem [frame ↑4 [...]; cnfg #1[ ]; num #2[ ]; bounded #3[ ]]

role head

syn [head [cat n; proper -]; level [max -; lex [ ]]]

sem [frame ↑5 [...]; cnfg #1[ ]; num #2[ ]; bounded #3[ ]]

e.g., *He fixed the washer / *washers in a week*

He couldn't clear much snow in such a short time

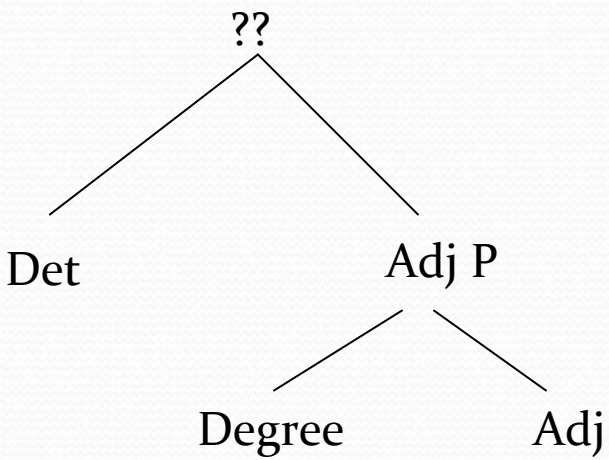
but **He cleared snow in such a short time*

A different kind of nominal phrase

<u>Constructs:</u>

the privileged
the poor
the clueless
the very rich
the less fortunate
the uninvited
the affluent
the hardy
the obstinate
the dead
the fallen
the clumsy

**the spacious*
**the expensive*
**the rainy*
**a rich*
**these affluent*
**many clueless*



“a construction is not a sum of its parts”

Group Identity Noun Phrase

inherit Determination

sem [frame ['a group of people defined by property x (↓1) and interpreted generically']
cnfg count
num plural
animacy human]

lxm *the*

syn [cat adj_{pred}
max [ ]
lex [ ]]

sem frame ↑1 [...]

Constructional meaning - summary

- lexical/'idiomatic' meaning

  the rich; blue moon; go postal;…

- grammatical function

  determination; modification; government; event-structure…

- pragmatic function

  Why didn't you become the leader?

  VERSUS *Why don't you be(come) the leader?*

(1) *Why don't you wear shoes*? (2 interpretations)

(2) *Why don't you have any friends*? (1 interpretation)

(3) *Why don't you try something else tomorrow*?

(1 interpretation)

(4) *Why don't you be the one in charge*?

(1 interpretation)

- normal WHY question, inversion
- normal imperative **don't + be** (don't be a fool)
- conflict in polarity **don't + some** (ex. 3)
- tense restrictions (no past, future?)
- has to be negative
- different pragmatic function/speech act

Informal representation of WHY- suggestion

Attenuated-Order

v+

prag [speech-act 'polite order']

prosody […]

Subject-Predicate

v+

why

Sub-Aux-Inversion

syn 'DO-support'

sem [polarity neg.
tense pres.]

phonol. 'contraction'

#1

n+

Imperative

v+

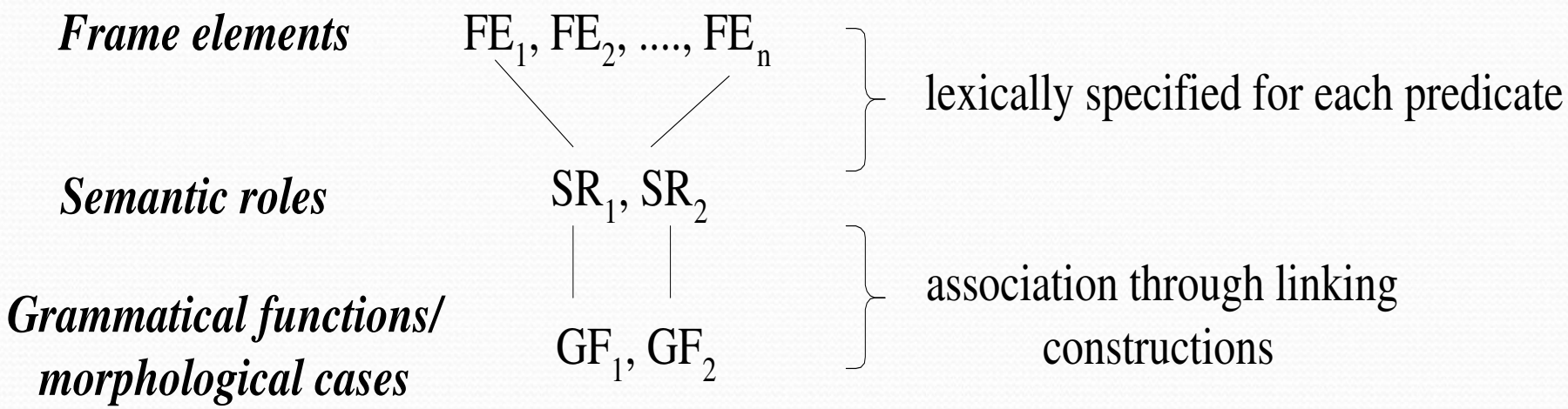
polarity positive

frame ['action']

val {#1 [Agt
n+], #n []*}

Verbs in CxG

- **linking** constructions
  - Frame
  - Valence
  - Syntactic expression of arguments



Valence representations
(= **lexical** constructions)

BUY

inherit Subject

syn [cat v; max -; lex +]

sem [frame COMMERCIAL_TRANSACTION; FE #1 [Buyer]; FE #2 [Seller]; FE #3 [Goods]; FE #4 [Money]]

val { #1 [rel [θ agt; DA +] , #3 [rel [θ pat; DA -] }

lxm *buy*

minimal → full (active transitive)

BUY - Transitive Object

syn [cat v; max -; lex +; voice active]

sem [frame COMMERCIAL_TRANSACTION; FE #1 [Buyer]; FE #2 [Seller]; FE #3 [Goods]; FE #4 [Money]]

val { #1 [rel [θ agt; DA +; gf sub]; syn n+] , #3 [rel [θ pat; DA -; gf obj]; syn n+] }

lxm *buy*

Compositionality revisited

- **Subject–Predicate construction**
- **Verb Phrase** construction
- **Modification** construction

- i.e., every major syntactic function:

  government, determination, modification, headedness…

CxG as a model relevant to describing 'whole language'

- *General questions for linguistic theory:*
  - What is language?
  - What constitutes linguistic knowledge, how is it organized in our brain?
  - What is/isn't universal about it?
  - Where does linguistic structure come from?
  - What is the nature of language change?
- *Constructional assumptions:*
  - … complex symbolic tool for communication, with a perceptual basis
  - … conventional associations between form, meaning, and pragmatics
  - … cognitive and social basis
  - … from usage
  - … gradualness, layering

Construction types - overview

- Lexical constructions

  lexical units (one-word, multi-word)

- Linking constructions (a.k.a. ASCs)

  predictable associations between semantic arguments and their (morpho)syntactic realization

- Phrasal constructions

  hierarchical & dominance relations

- Ordering constructions

  subtype of phrasal cxns: regular linearization patterns (may or may not be pragmatically conditioned)

Construction Grammar - summary

- Sources of **explanations**:
  - general cognitive principles
  - principles of social interaction
- Methods:
  - **induction**; abduction
- Sources of data:
  - actual **usage** (i.e., authentic language)

Conclusion

- Goal of CxG:

  develop analytic and representational tools for articulating (more) realistic representations of speakers' linguistic knowledge and communicative competence

  - accurate in detail (formal, semantic, pragmatic…)
  - systematic and allowing generalizations