Rethinking grammatical meaning and its relation to lexical usage

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- The problem: constructional meaning
  - i.e., the meaning conveyed by syntactic constructions
  - Current claim: derived from the construction's distribution
  - But it seems to be more complex than that
  - A case in point: the conative construction in English
- I will show that:
  - A general characterization cannot be derived from usage
  - Lower-level generalizations are more important
  - This suggests a different view of constructional meaning and its relation to usage

Constructional meaning

- Semantic aspects of grammar
  - Traditional position
    - Only lexical items convey meaning
    - Grammar = abstract rules, devoid of meaning
  - Constructional approaches adopt a different view:
    - The whole grammar consists of form-meaning pairs
    - Linguistic elements of any kind conveys meaning of its own
    - That includes syntactic patterns, such as verb-argument constructions

Constructional meaning

- Example: the ditransitive construction (Goldberg 1995)
  - Form: NP V NP NP (double-object pattern)
  - Conveys the idea of 'transfer' on its own, e.g.:

    Kick me the ball!

    Dad promised me a car.

    Gran baked us a cake.

  - Empirical evidence: Kaschak & Glenberg (2000)
    - Sentences with nonce denominal verbs
    - e.g., *I **crutched** him the apple*
    - Understood as a transfer, despite the nonce verb

Constructional meaning

- The origin of constructional meaning
    - Current (usage-based) position:
        - Constructions come to be associated with the meaning of their most typical lexical items
        - Verbs in the case of verb-argument constructions
    - Example: the ditransitive construction
        - Most typical verbs: verbs of giving (cf. Gries and Stefanowitsch 2003): *give*, *send*, *lend*, ...
        - Therefore 'transfer' is the meaning of that construction
    - Ample empirical evidence (corpus studies, experiments) with several constructions

- Problems with the lexical origin of constructional meaning
  - It requires that all constructional meanings are lexicalized
    - Problematic for abstract constructions (e.g., the transitive)
    - Revised version of the hypothesis:
      - Constructions are stored pairings of a syntactic form with some recurrent **components** of lexical meaning
  - Still problematic for some constructions
    - A case in point: the conative construction (NP V *at* NP)
    - Occurs with transitive verbs: *at* is inserted before the DO

      The hunter shot at the duck (vs. *The hunter shot the duck*)

      He swept at the floor (vs. *He swept the floor*)

      She kicked at the ball (vs. *She kicked the ball*)

- The meaning of the conative construction
  - Basically a "detransitivizing" function: one (or more) features of the transitive variant is absent, e.g.:
    - Contact

      He **hit at** her face with the gun, but she jerked her head back [BNC H85-837]
    - Intentionality of the agent

      They wandered on, aimlessly **kicking at** the pine cones [BNC B3J-2291]
    - Completion

      He **gulped at** the beer again [BNC GWF-1031]

  - If anything, the general meaning is very abstract

    "the emphasis is not on the effect of the activity on some specific object [...] but rather on the subject's engaging in the activity" (Dixon 1991: 280)

- Can we relate this meaning to lexical usage?
  - cf. Perek (to appear): collexeme analysis of the conative
    - Collexeme analysis in a nutshell:
      - Captures how typical a word is given its frequencies of occurrence and of non-occurrence in a construction
      - In practice: all other things being equal, ...
        - … if F(V in C) is high, typicality is high
        - … if F(V in other Cs) is high, typicality is low
    - Output: collexemes ranked by typicality (*collostruction strength*)
    - Superior to raw frequencies to profile constructional meaning
  - Corpus: 16 MW taken from 431 novels (BNC); 2563 instances of the construction over 159 verbs

- ## Results:

rank	verb	f(conative:all)	coll.strength	rank	verb	f(conative:all)	coll.strength
1	*tug*	226:661	209.92	16	*hammer*	29:263	12.87
2	*clutch*	179:823	127.13	17	*snatch*	43:567	12.86
3	*dab*	72:166	75.74	18	*jab*	24:180	12.58
4	*claw*	53:156	49.14	19	*scrabble*	18:112	11
5	*gnaw*	43:97	46.02	20	*paw*	13:56	10.23
6	*sniff*	73:643	32.05	21	*scratch*	35:524	9.13
7	*nibble*	36:121	31.26	22	*slash*	17:149	8.07
8	*sip*	71:689	28.56	23	*swipe*	9:32	8.07
9	*peck*	29:87	26.95	24	*niggle*	8:26	7.58
10	*nag*	31:107	26.62	25	*poke*	26:364	7.55
11	*pluck*	44:300	24.13	26	*suck*	35:656	6.7
12	*tear*	91:1363	22.51	27	*prod*	17:190	6.52
13	*stab*	36:291	17.41	28	*kick*	51:1186	6.44
14	*grab*	76:1217	17.29	29	*lap*	11:112	4.82
15	*hack*	22:140	13.08	30	*strain*	23:466	4.13

  – Many different verbs, no common semantic feature(s)
  – No clear indication of the constructional meaning

The conative construction

- Proposal: verb-class-specific constructions (Croft 2003)
  - Not one general construction but several lower-level ones
    - In line with the assumptions of construction grammar

      cf. Langacker (2000: 3): "linguistic patterns occupy the entire spectrum ranging from the wholly idiosyncratic to the maximally general"

    - Language acquisition: children start with low-level schemas
    - The exact distribution of a construction is better captured at lower levels (cf. Boas 2003, Herbst 2007)
    - Plausible from a processing perspective, cf. Langacker (2000):

      "lower-level schemas [...] have a built-in advantage in the competition with respect to higher-level schemas" (p. 16)

Verb-class-specific constructions

- Semantic annotation
  - Based on WordNet (Fellbaum 1998)
  - Verbs in the distribution grouped into semantic classes
  - Then collexeme analysis performed on each verb-class-specific construction
- Four classes under study:
  - Verbs of ingestion (*eat*, *nibble*, *sip*)
  - Verbs of cutting (*cut*, *hack*, *nick*)
  - Verbs of pulling (*pull*, *tug*, *drag*)
  - Verbs of striking (*hit*, *kick*, *pound*)

Verb-class-specific constructions

- Verbs of ingestion

    James Bond sipped at his Martini

    – An agent takes in some substance, consuming it.

- In the ingestion-conative construction:

    – Only a small amount is ingested ('bit-by-bit' reading)

    – Open to repetition

Verb-class-specific constructions

- Top collexemes:
  - *pick*, *sip*, *nibble*: small quantity, 'bit-by-bit' reading
- Bottom collexeme: *eat*
  - Maximally general, lends itself better to a holistic interpretation

Rank	Verb	Fq_{corpus}	$Fq_{construction}$	CollStr
1	pick	35	29	36.91
2	sip	684	76	21.56
3	nibble	78	27	19.84
4	peck	34	17	15.84
5	suck	113	13	3.8
6	gulp	112	8	1.35
7	swig	23	3	1.34
8	lick	57	3	0.48
9	lap	20	1	0.29
10	gobble	36	3	-0.2
11	eat	3909	1	-111.39
Total		5101	181	

Verb-class-specific constructions

- Verbs of cutting

  The explorers chopped at the jungle with machetes

  - An agent moves a suitable instrument against some object, causing a rupture in its physical integrity.

  - In the cutting-conative construction:

    - Contact is made but is minimal or fails entirely

    - Implicature of repetition

Verb-class-specific constructions

- Top collexemes:
  - *hack*, *saw*, *chisel*: inherently repetitive, a single movement does not bring about a significant effect
  - *chip*: patient is minimally affected
- Bottom collexeme:
  - *cut*: maximally neutral, holistic interpretation

Rank	Verb	Fq_{corpus}	$Fq_{construction}$	CollStr
1	hack	100	22	15.75
2	saw	57	6	2.54
3	chip	29	4	2.24
4	chisel	10	2	1.59
5	scratch	127	6	0.99
6	snip	36	2	0.63
7	nick	14	1	0.51
8	chop	132	3	-0.25
9	slice	160	1	-1.14
10	cut	1437	7	-16.8
	Total	2129	54	

Verb-class-specific constructions

- Verbs of pulling

  The goat pulled at the rope

  – An agent exerts a force on a patient, usually in order to move it towards self or to affect it in some other way.

  – In the pulling-conative construction:

    - Prevents an implicature of change of location/state

    - Repeated actions, since a single iteration does not bring about a significant effect

    - Focus on the agent

Verb-class-specific constructions

- Top collexemes:
  - *tug*: focus on the agent (lots of energy, extended duration; cf. OED), not so much on the dynamics of the event itself
  - *pick*, *pluck*: sharp, sudden motion, short duration, prone to repetition
- Bottom collexemes:
  - *pull*: maximally neutral
  - *drag*: strongly presupposes the motion of the patient

Rank	Verb	Fq_{corpus}	$Fq_{construction}$	CollStr
1	tug	457	195	118.78
2	pick	95	34	16.05
3	pluck	192	43	11.92
4	tweak	23	3	0.69
5	twitch	28	3	0.53
6	jerk	174	7	-1.07
7	wrench	210	8	-1.34
8	yank	108	1	-2.38
9	haul	356	5	-6.03
10	drag	1068	22	-13.61
11	pull	3872	127	-40.92
	Total	6583	448	

Verb-class-specific constructions

- Verb of striking

   Sally kicked at the ball

   – An agent performs some movement in the direction of a patient, aiming at forceful contact with it, usually with the intention of affecting it (harm, damage, motion)

   – In the striking-conative construction:

      - The agent's goal is not reached: lack of contact, energy, effect, intentionality

      - Focus on the agent

Rank	Verb	Fq_{corpus}	$Fq_{construction}$	CollStr
1	dab	145	78	54.03
2	lash	112	34	13.77
3	swipe	21	10	6.51
4	peck	20	9	5.65
5	hammer	137	21	3.54
6	jab	24	6	2.37
7	pummel	28	4	0.94
8	swat	24	3	0.66
9	pound	52	5	0.57
10	scuff	16	2	0.53
11	batter	57	4	0.27
12	bat	16	1	-0.15
13	whack	18	1	-0.18
14	kick	913	60	-0.35
15	tap	499	30	-0.54
16	whip	79	3	-0.68
17	bang	151	7	-0.72
18	bash	46	1	-0.76
19	strike	810	47	-0.85
20	smash	109	4	-0.88
21	punch	159	6	-1.09
22	thump	111	3	-1.28
23	slap	340	13	-1.88
24	beat	502	20	-2.36
25	pat	507	6	-9.27
26	hit	983	18	-13.78
	Total	5879	396	

Verb-class-specific constructions

- Top collexemes:
  - *dab*: involves little energy, normally not affecting the target
  - *hammer*: multiple blows (a single blow does not suffice in affecting the patient in the intended way)
  - Agent-oriented verbs (*lash*, *swipe*, *peck*, *jab*)
    - Focus on the agent's activity (defined shape and/or specific body-part/instrument)
    - Hints at the agent-focus of the construction
- Bottom collexemes:
  - *hit*, *strike*: maximally neutral
  - Many impact-oriented verbs (*smash*, *thump*, *beat*)
    - Focus on the contact between agent and patient (specify intensity or effect)
    - At odds with the 'lack of contact/effect' reading

Verb-class-specific constructions

- Summary: in each verb-class-specific construction:
  - Strongest collexemes = verbs that inherently bear semantic features commonly attributed to each construction
  - Conversely, more "basic" verbs are always repelled
  - It appears that the verb-class-specific constructions may have a lexical origin, while the general construction does not

Conclusion

- The conative construction revisited
  - Centered on a few verb-class-specific constructions
  - Other uses may be integrated through analogy
- No need for an abstract meaning
  - Lower-level constructions are sufficient and more basic
  - New picture of the relation of constructional meaning to lexical usage => more accurate at lower levels
  - Similar finding to Bybee & Eddington's (2006)
    - But extends the same idea to constructional meaning
    - Both subsumes and complements previous accounts

Thanks for your attention!

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