Making a statement: eventuality denoting nominals

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Outline & Goals

1. Develop novel linguistic tests to identify which (polysemous) common nouns (CN's) can denote eventualities. Focus on 'abstract' CNs.
   - E.g., *allegation*, *belief*, *fear*, *statement*

2. Extend the use of tests familiar in event semantics to categorise CN's that are eventuality-denoting into aspectual classes.
   - I.e. *allegation*, *statement* (EVENTS) vs. *belief*, *fear* (STATES)

3. Derive predictions regarding the felicitous use of polysemous CN's with an eventuality-denoting sense in numeral constructions as a function of:
   - what senses they have
   - the aspectual class of the eventuality-denoting sense

(1) a. Alex's two allegations that Cal lied and Dom swore were true.
b. Alex and Billie's two allegations here at exactly 2:03pm that Cal lied upset Dom.
c. #Alex's two allegations here at exactly 2:03pm that Cal lied upset Dom.

Background: Denotations of Common Nouns (CNs)

Traditional view:

- 'Concrete' CNs denote properties of type $\langle s, \langle e, t \rangle \rangle$
  - *boat*, *cat*
- For 'abstract' CNs, less work and less concord:
  - eventualities? (e.g., Grimm 2014; Zamparelli 2020);
  - tropes? (e.g., Moltmann 2004)

The eventualities view for all CNs:

- Parsons (1990, §10.6) asked: might all CNs denote STATES?
  - He concluded this position lacks evidence
- Schwarzschild (2022) recently defends this position
  - e.g., *boat* denotes a STATE (with physical boats as participants)

We should distinguish whether a CN denotes an eventuality, and if so, what kind?

Introducing two diagnostic tests

Two diagnostic tests

1. the light verb construction test: LVC test
2. the genitive construction test: GC test

separate two classes of CNs:

- *allegation*, *belief*, *party*, ...
- *boat*, *cat*, *fact*, *information*, ...

Evidence from Czech and English, further expansion crosslinguistically is planned

The Light Verb Construction (LVC) Test

If a CN can be felicitously used in a LVC, it has at least one sense in which it denotes (a set of) eventualities.

- In LVCs the verb is semantically bleached of its 'ordinary' meaning (e.g., Pullum and Huddleston 2002, ch. 4, §7)

(2) a. Alex made that {allegation | claim | statement}. +LVC
b. Alex had that {belief | fear | hope | party}. +LVC

(3) a. Alex {gave someone | had} that {fact | information}. −LVC
b. Alex {made | had | took | gave someone} that {boat | cat}. −LVC

LVC test for Czech

(4) a. Alex udělal toto {prohlášení | tvrzení}. +LVC
Alex do.PAST this {statement | claim}.
'Alex made this {statement | claim}.'

b. Alex měl {tento strach | tuto domněnku / pařbu / naději}. +LVC
Alex have.PAST {this fear | this belief / party / hope}
'Alex had this {fear | belief | party | hope}.'

(5) a. Alex {dal někomu | měl} {tento fakt | tuto informaci}. −LVC
Alex {gave.PST someone | have.PST} {this fact | this information}
'Alex {gave someone | had} this {fact | information}.'

b. Alex {dal někomu | měl} tuto {lod' | kočku}. −LVC
Alex {gave.PST someone | have.PAST} this {boat | cat}
'Alex {gave someone | had} this {boat | cat}.'

The Genitive Construction Test (English)

In a Saxon Genitive Construction, *A*'s *B*, if *B* denotes an eventuality, then *A* can be a participant (e.g., Agent, Theme, Experiencer, Instrument etc.), in that eventuality.

(6) a. Alex's allegation/claim/party ≈ the EVENT of alleging/claiming/partying to which Alex stands in the Agent relation
b. Alex's belief/fear/hope ≈ the STATE of belief/fear/hope to which Alex stands in the Experiencer relation

} EV-denoting

(7) a. Alex's information ≉ the information STATE (or EVENT) in which Alex is the Experiencer/Agent/Theme/Instrument/Stimulus.
(If *information* denoted eventualities, and information were about Alex, then the Theme in that eventuality would be an informational entity, not Alex.)
b. Alex's boat/cat ≉ the boat/cat STATE to which Alex stands in the Experiencer/Instrument/Theme/Stimulus etc. relation

} not EV-denoting

For the GCs in (6): Relation between A and B is constrained and delimited by the lexical semantics of the CN

For the GCs esp in (7-b): Totally open-ended what this relation is

The Genitive Construction Test (Czech)

In a Genitive Case Construction *A*.GEN *B*, if *B* denotes an eventuality, then *A* can be a participant (e.g., Agent, Theme, Experiencer, Instrument etc.) in that eventuality.

(8) a. Alexův {argument | večírek}
Alex.M.GEN {argument | party}
Alex's {argument | party}

b. Alexova {víra | naděje}
Alex.F.GEN {belief | hope}
Alex's {belief | hope}

} EV-denoting

(9) a. Alexova informace
Alex.F.GEN information
Alex's information

b. Alexova {lod' | kočka}
Alex.F.GEN {boat | cat}
Alex's {boat | cat}

} not EV-denoting

Patterns just as with English, e.g.:

- *Alexův argument* $\approx$ the argument EVENT to which Alex stands in the Agent relation
- *Alexova lod'* $\not\approx$ the boat STATE to which Alex stands in the Experiencer/Instrument/ Theme/Stimulus etc. relation

Summary: Denotations of CNs

Our two diagnostic tests partition CNs into two classes

1. Those that do not denote eventualities
   - E.g., *boat*, *cat*, *fact*, *information*
2. Those that can denote eventualities
   - E.g., *allegation*, *belief*, *fear*, *hope*, *party*, *statement*

Next step: Deeper dive into eventuality-denoting CNs

- Classification into aspectual classes
- Question: What impact does Aspectual Class have on countability for these CNs?

Tests for Aspectual classes

Tripartite distinction of aspectual classes into EVENTS, PROCESSES or STATES (Mourelatos, 1978)

- Diagnosed by battery of tests from event semantics (e.g., Dowty 1979)
- Some care needed in application (e.g., Filip 2019)

(10) Telic (EVENTS)
  a. Alex jogged to campus in 30 mins / ?for 30 mins.
  b. Alex jogged to campus three times / (?)a lot (last week).

(11) Atelic (PROCESSES)
  a. Alex jogged for 30 mins / ?in 30 mins.
  b. Alex jogged a lot / ?three times.

(12) Atelic (STATES, especially non-episodic)
  a. Alex was a doctor for 35 years / ?in 35 years.
  b. Alex was a doctor ?a lot / ?three times.

Our plan: Use tests and LVCs to classify aspectual classes of eventuality-denoting CNs

Aspectual Classes of Eventuality-Denoting CNs

statement and *allegation* pattern as EVENT-denoting

(13) a. Alex made that {statement | claim | allegation} {in under 2 minutes | (?)for 2 minutes/hours}.
b. Alex made that {statement | claim | allegation} {three times | (?)a lot}.

belief and *hope* pattern as STATE-denoting

(14) a. Alex had that {belief | hope} {?in 5 years | for 5 years (while in grad school)}.
b. Alex had that {belief | hope} {?three times | ?a lot}.

Interestingly, no cases of LVCs that suggest that eventuality-denoting CNs denote (sets of) PROCESSES

- In the following, only discussing EVENTS and STATES, setting PROCESSES aside.

Diagnostic tests: Summary

Table: Results of applying our tests: whether nouns denote eventualities, and if so, which kind of eventualities. EV = EVENTS; ST = STATES.

Noun	boat	cat	fact	information	allegation	claim	party	statement	belief	hope	fear
LVC test	0	0	0	0	1	1	1	1	1	1	1
GCC test	0	0	0	0	1	1	1	1	1	1	1
Eventuality (if any)	–	–	–	–	EV	EV	EV	EV	ST	ST	ST

Numeral constructions for eventuality-denoting CNs: Main claims

Expands empirical coverage in Sutton and Filip (2019) and Sutton and Filip (2020), also that of Grimm (2014)

1. EVENT-denoting senses of CNs are typically countable (e.g., we can count *allegation* qua its EVENT-denoting senses)
   - What counts as 'one' such EVENT depends on anchoring relations to e.g., Agents, Themes, or spatio-temporal locations (see Grimm 2014);

2. STATE-denoting senses of CNs are not countable
   - Mourelatos 1978 wrt ATELIC:MASS-TELIC:COUNT
   - Mass senses can be coerced into count readings via anchoring to Experiencers or Stimuli (e.g., *?three fears*)

3. INF-ENTITIES in the denotations of polysemous CNs such as *belief* are typically countable, and do not need anchoring.
   - even CNs with a (mass) STATE-denoting sense can be countable on their INF-ENTITY denoting sense
   - Polysemy not taken into account by Mourelatos 1978

Assumptions

Thematic role assumption

- EVENTS may be defined for the full range of thematic roles; and are homomorphically mapped to their temporal traces (Krifka, 1989)
- STATES may be defined only with respect to *Experiencer*, *Instrument*, and *Theme* (Parsons 1990)

Quantization assumption

- Grammatical counting turns on enumerating quantized sets of entities relative to a context (we suppress details regarding contexts below).
- Quantized sets have no two members in a proper part relation: $QUA(P) \leftrightarrow \forall x, y[(P(x) \wedge P(y)) \rightarrow \neg x \sqsubset y]$ (see Krifka 1989).

Claim: EVENT-Anchoring

The cardinality of a set of EVENTS in the denotation of a CN supervenes on the cardinality of a set of anchors

- *two allegations* denotes two EVENTS only if there is a quantized set of two Agents, two temporal traces, or two locations.
- origins in Davidson (1969)'s view that we can identify eventualities in terms of the objects to which they are related (see also Krifka (1989) wrt incremental themes)
- *participant anchoring* for abstract CNs coined by Grimm 2014

(15) $ANCH(e_v, \mathcal{P}_{\langle v,t\rangle}, f_{\langle v,e\rangle}) \stackrel{\text{def}}{=} \lambda x.\exists e'[e' \sqsubseteq e \wedge \mathcal{P}(e') \wedge f(e') = x]$, where $f \in \{\text{AG}, \text{TH}, \tau, \text{LOC}\}$
The set of anchors of a sum eventuality e relative to an anchoring relation f and an eventuality-denoting predicate $\mathcal{P}$ is the set of f-participants of the $\mathcal{P}$-parts of e.

(16) $\mu_{ev}(e_v, \mathcal{P}_{\langle v,t\rangle}, f_{\langle v,e\rangle}) \stackrel{\text{def}}{=} |ANCH(e, \mathcal{P}, f)|$ if $QUA(ANCH(e, \mathcal{P}, f)), \perp$ otherwise.
A sum eventuality e counts as n $\mathcal{P}$s relative to anchoring relation f iff the cardinality of the set of f anchors of e for $\mathcal{P}$ is n, presupposing that this set is quantized.

EVENT-Anchoring Example: *party*

party: somewhere on the polysemy/lexical ambiguity spectrum

- (i) a social event; (ii) a group of people who are involved in an activity together, esp. a journey; (iii) a political group/organisation
- *party* qua (i) has an EVENT-denoting sense, per our diagnostic tests

Cardinality of *party*-EVENTS supervenes on cardinalities of participants via anchoring:

- Typical anchors for counting: Spatiotemporal locations (17-a) or Occasions/Beneficiaries (17-b)
- All anchors ruled out in (17-c), so not interpretable

(17) a. I attended the two parties on Thursday and Saturday.
b. The two simultaneous parties for Alex and Billie's defences here at 2pm were attended by the same people.
c. #The two simultaneous parties for Alex's defence here at 2pm were attended by the same people.

Contrast with Grimm's *participant anchoring*

Grimm's (2014) claims re Psych Nouns:

- 'EVENTS are by hypothesis, discrete' (p. 196)
- Nouns such as *despair* are polysemous insofar as they 'may also permit additional event-based readings, which are countable' (p.197)

(18) ...his deep glooms, his despondencies, his despairs

Contrast with Grimm's *participant anchoring* cont.

(18) ...his deep glooms, his despondencies, his despairs

We disagree:

- EVENTS are not by hypothesis, discrete. Predicates of EVENTS must be anchored to suitable participants to allow counting
- Nouns such as *despair* are not (relevantly) polysemous. They denote STATES, and are not felicitous in numeral constructions:

(19) ??his three deep glooms, ??four despondencies, ??five despairs

- Plural uses such as (18) are coerced via anchoring to discrete intervals (e.g., denoting discrete intervals of despair)
- Analogous to a coerced *interruption reading* common for states denoted by individual-level predicates: e.g., *Francis is occasionally blond*, which, however, does not involve coercion to episodic EVENTS (Fernald, 2000, p.70)

Claim: Anchor Blocking

Polysemy blocks the use of an anchor: We cannot anchor a given sense of a CN via the lexical material of another sense of that CN.

- If N is polysemous between senses $S_{\langle v,t\rangle}$ and $S'_{\langle \sigma,t\rangle}$, $S'_{\langle \sigma,t\rangle}$ cannot anchor $S_{\langle v,t\rangle}$.

A's allegation has two senses:

i. an INF-ENTITY = that which is alleged, e.g., *A's two allegations that B lied and that C swore*;

ii. an EVENT of making an allegation, e.g., *A's allegation took a few seconds*

(20) [Context: A stated] '*B and C both lied*'.

- (20) can be described as *one allegation* or *two allegations*, exhibiting direct counting qua INF-ENTITY sense of *allegation*, relative to context.
- (20) cannot be understood and described as *two allegations*-qua-EVENTs
  - a single speaker cannot simultaneously utter two separate direct speech acts

(21) #*A's two allegations each took a few seconds.*

Claim: Anchor Blocking cont.

(20) [Context: A stated that] *B and C both lied.*

(21) *#A's two allegations each took a few seconds.*

Anchor blocking captures this

- *allegation* qua its EVENT sense must be counted relative to an anchor (see above EVENT-anchoring)
- but no anchor is not available in (21), given that a single speaker can make at most one direct speech act at a given time and location
- if *allegation* in its intended EVENT sense, as in an (21), could be anchored via its other INF-ENTITY sense, there should be a felicitous reading of (21) **in this context**, contrary to fact.

EVENT-denoting CNs: *allegation*

Recall EVENT-anchoring assumption:

- The cardinality of EVENT-denoting senses of CNs supervene on cardinalities of quantized anchor sets.

(22)
a. Alex's two allegations that Cal lied and Dom swore were true.
b. Alex and Billie's two allegations here at exactly 2:03pm that Cal lied upset Dom.
c. #Alex's two allegations here at exactly 2:03pm that Cal lied upset Dom.

- In (22-a) counting 2 INF-ENTITIES directly (*that Cal lied and Dom swore*)
  - Also compatible with two EVENTS, assuming e.g., distinct times/locations
- In (22-b), we count *allegation*-EVENTS
  - AGents $\{alex, billie\}$ is the only anchor set with cardinality 2
  - INF-ENTITY denoted by *Charlie lied* only counts as 1
- In (22-c), both EVENT and INF counting is ruled out
  - Therefore (22-c) is not interpretable.

STATE-denoting CNs: *fear*

Unlike for EVENT-denoting CNs, CNs that only denote STATES are (typically) mass (see Mourelatos (1978))

- E.g., *fear* denotes STATES (of being in fear) and is mass.
- Mass nouns have cumulative reference Quine (1960), and singular mass nouns e.g., *fear* can denote sums of states

(23) a. Alex and Billie's fear of spiders and long flights are why they won't travel to Australia.

b. ?Alex's two fears of spiders and long flights are why she won't travel to Australia.

- In (23-a), singular *fear* can denote a sum of STATES with both distinct Stimuli and Experiencers
- In (23-b), attempting to anchor STATES to Experiencers or Stimuli results in coercion

Interactions with polysemy: *belief*

Mourelatos (1978) did not account for polysemy:

- Some STATE-denoting nouns can be count nouns if they are polysemous and the other sense is countable
- *belief* is INF-ENTITY/STATE polysemous
- The INF-ENTITY sense (the Theme of the STATE) is countable without anchoring
  - E.g., *three beliefs* = 'three informational entities/propositions', that which is (or could be) believed

Anchor blocking blocks counting *belief* STATES via their Themes (i.e. INF-ENTITIES)

- one cannot select the mass (STATE) denoting sense of *belief* in counting constructions, because *belief* has a count INF-ENTITY-denoting sense
  - (*two beliefs* $\neq$ two *belief*-STATES)

For why some INF-ENTITY denoting nouns are mass, see Sutton and Filip 2019, 2020

Polysemous STATE-denoting CNs: *belief*

(24) a. Alex's two beliefs that Cal's birthday is tomorrow and Dom's is on Friday are why they went shopping.
b. ?Alex and Billie's two beliefs that Cal's birthday is tomorrow are why they went shopping.
c. #Alex's two beliefs that Cal's birthday is tomorrow are why they went shopping.

- In (24-a), direct counting of 2 beliefs-qua-INF-ENTITIES (*that Cal's birthday is tomorrow* and *that Dom's birthday is on Friday*)
- In (24-b), 2 INF-ENTITIES ruled out
  - only one thing believed (*that Cal's birthday is tomorrow*)
  - trying to anchor to Experiencers (Alex and Billie) might make available a coerced count interpretation
- In (24-c), both counting INF-ENTITIES and coercing STATES ruled out
  - (24-c) is uninterpretable

Summary & Conclusions

New diagnostic tests

- Novel LVC and GC tests to classify CNs that have an eventuality-denoting sense
- Tests adapted from event semantics categorise their aspectual class

Countability and abstract nouns

- Counting with the eventuality-denoting senses of CNs requires *anchoring* to thematic roles. Aspectual class constrains what anchors are available.
- We can motivate why the EVENT-denoting senses of *allegation* and *party* are easily countable and why this prompts coercion for STATE-denoting senses of *belief* and *fear* (contra Grimm 2014)

Importance of polysemy

- Not all STATE-denoting CNs are uncountable; e.g., *belief* is countable when its INF-ENTITY-denoting sense is selected;
- Anchor blocking: an INF-ENTITY sense of a CN cannot anchor its EVENT-denoting sense; e.g., *allegation*-EVENTS cannot be anchored to *allegation*-INF-ENTITIES

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