

Abstract Nouns and Countability

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January, 2012
LSA Annual Meeting

The Mass-Count Distinction

The mass-count distinction is perhaps the fundamental distinction in the nominal domain

Celebrity nouns: *dog* and *water*

Neglected nouns: abstract nouns

- ▶ *intelligence, fear, crime, annoyance, requirement*

This is work in progress to understand how and why abstract nouns may be counted

Background: The Mass-Count Distinction

What does it mean for a noun to be morphosyntactically countable or uncountable?

Countable nouns (*dog, chair*):

- ▶ plural marking (*dogs, chairs*)
- ▶ modification by cardinal quantifiers (*two dogs/chairs*)
- ▶ modification by determiners implicating plurality (*several dogs, several chairs*)

Uncountable nouns (*water, sand*)

- ▶ do not permit plural marking (**waters, *sands*)
- ▶ nor cardinal quantifiers or those implicating plurality (**two waters, *several sands*)
- ▶ modifiable by *much* or *a lot of* (*much water, a lot of water*)

Background: The Mass-Count Distinction

Controversial whether the syntactic status signals an ontological contrast (e.g. individuals vs. substances)

Outline

Two parts of the investigation:

Part 1:

- ▶ deverbal nouns
- ▶ examine the link between nominal countability and aspectual type of derivational source

Part 2:

- ▶ all noun types
- ▶ examine usage patterns for abstract nouns from different semantic domains (*bodily and mental states; psych nouns*)

Abstract Nouns and Aspect

The countability of abstract deverbal nouns has most often been discussed in terms of a “cross-categorial analogy” with verbal aktionsart (Mourelatos 1978).

- ▶ mass/count distinction is taken to be analogous to aspectual state/event distinction
- ▶ widely discussed by philosophers, cognitive scientists and linguists: Mourelatos (1978), Talmy (1988), Jackendoff (1991), Brinton (1998), Alexaidou (2008)

While this idea has been around for some time, it has not been systematically examined

Countability and Aktionsart

Derivational patterns are taken as primary evidence for this connection:

- ▶ states and activities correspond to non-count nouns
 - ▶ *live* > *a quantity of/*one living*
 - ▶ *run* > *much/*a running*
- ▶ accomplishments and achievements correspond to count nouns
 - ▶ *perform* > **a good deal of/one performance*
 - ▶ *arrive* > **much/an arrival*

The countability preference of abstract nouns, then, as argued most explicitly in Brinton (1998), could follow from the aktionsart of their derivational source.

Testing the aspectual hypothesis

Determine if there is a straightforward relation between aktionsart and countability

Overall process:

For a given deverbal noun, determine:

- ▶ its derivational source
- ▶ the derivational source's aktionsart
- ▶ the noun's countability status (count, non-count)

Examine if there is a reliable correlation between the derivational source's aktionsart and the noun's countability status

The databases

CELEX: lexical database of English (and German and Dutch) containing a wealth of information

- ▶ morphology (derivational and compositional structure)
- ▶ syntax (word class, word class-specific subcategorizations)
 - ▶ classifies nouns into COUNTABLE, UNCOUNTABLE, GROUP NOUNS, etc.
- ▶ word frequency (summed word and lemma counts, based on recent and representative text corpora)

The databases

Extracted from CELEX:

- ▶ the set of deverbal nouns in English along with their the derivational source
- ▶ their countability classification (COUNTABLE, UNCOUNTABLE)

The databases

LCS: Lexical Conceptual Structure database by Bonnie J. Dorr at the University of Maryland.

Contains Lexical-Conceptual Structures organized into semantic classes that are a reformulated version of those in Levin (1993) *English Verb Classes and Alternations*

- ▶ also contains aspectual information (Dorr and Olsen 1997)

Extracted from LCS:

- ▶ Aspectual information for each predicate

LCS: Aspectual Information

States:

(BE indent/perc/loc
(thing 2))

Activities:

(ACT perc/loc (thing 1))

Accomplishments:

(CAUSE/LET (thing 1)
(GO loc (thing 2)
(toward/away from ...)))

Achievements:

(GO loc (thing 2) (toward/away from ...))

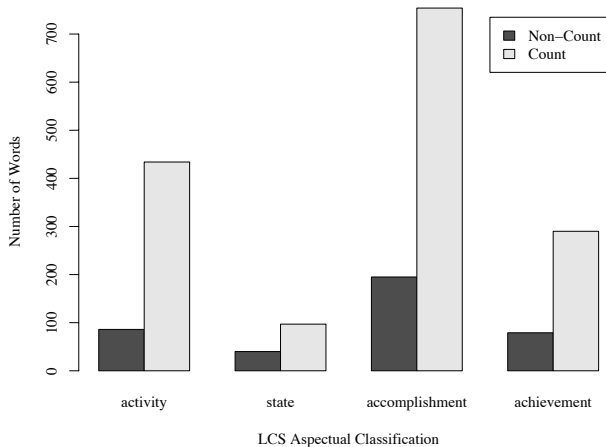
Database creation

Combined the information from the two databases

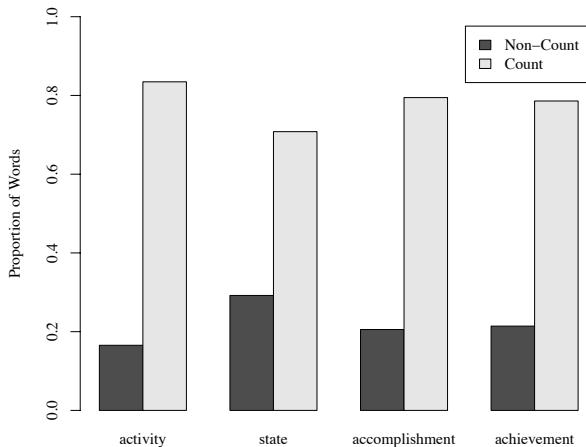
Excluded a lot of items:

- ▶ not directly derived from a verb (*bound + less + ness*, *combination-lock* < *combine*)
- ▶ there were many duplications (*lender* and *money lender*)
- ▶ excluded nouns whose verbal bases had multiple LCSs
- ▶ included only nouns which CELEX gave as either countable or uncountable, but not those that were ambiguous (35% of nouns)
- ▶ just under 2000 nouns remaining

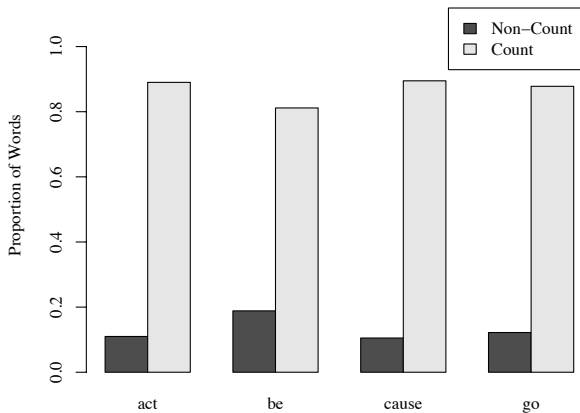
Testing the aspectual hypothesis



Testing the aspectual hypothesis



Testing the aspectual hypothesis



LCS Aspectual Classification (Zero-Derived Nouns)

Testing the aspectual hypothesis

Across the board, countable interpretations dominated

- ▶ regardless of the aktionsart class of the base verb

Still, accomplishments are more likely to have exclusively countable nouns than states are

Yet, states pattern differently from activities, which have a higher proportion of countable nouns

Many questions remain

Affixes

Many affixes contribute meaning which results in biases of countability

Many were highly significant predictors of countability class:

- ▶ *-age, -al, -ance, -ation, -er, -ery, -ment, -ure*

Tempting to think that the meaning of the verbal source and the affix together determine the countability

Affixes

Yet, many examples showed that the countability preference ultimately follows from the nature of the referent

- ▶ -er nominals are almost exclusively countable (*toaster*; *sweeper*)
but there were always exceptions, viz. *thinner* as in “paint thinner” is uncountable as it is a liquid

Most often, for a given type of derivational source and a given suffix, one finds conflicting outcomes:

resent (LCS: be) → *resentment* → uncountable
require (LCS: be) → *requirement* → countable

Interim conclusion

The aspectual hypothesis was partially validated

- ▶ states have proportionally fewer exclusively countable nouns than e.g. accomplishments ($\chi^2 = 4.9$, $df = 1$, $p < 0.05$)

But, the hypothesis is silent on

- ▶ the many nouns (1/3) which have both countable and uncountable uses
- ▶ other abstract nouns which are not deverbal, viz. qualities such as *honesty*

Overall, the analyses which make a link between aktionsart and countability seem to be pointing out something valid, but the landscape is much more complicated

Individuating the Abstract

Core question: When an abstract noun is countable, what is it that is actually being counted?

- ▶ Mourelatos/Brinton answer: events (rather than states)

What will emerge from the data in the second half:

- ▶ different ways to individuate an abstract state or quality by “anchoring” it in an event or participant
- ▶ a lot of unnoticed polysemy or sense extension
 - ▶ some particular senses are countable

This is best seen by looking at uses of individual nouns

Individuating the Abstract

Exploratory study:

- ▶ observed the countability behaviors of 50 nouns falling under the following WordNet categories:
 - ▶ noun.cognition
 - ▶ noun.attribute
 - ▶ noun.event (nouns denoting natural events)
 - ▶ noun.feeling
 - ▶ noun.state, taken from the subcategory “the condition or state of the body or bodily functions”

Individuating the Abstract

Two categories I will discuss:

- ▶ *Bodily and Mental States/Qualities*
 - ▶ provides clear examples of “anchoring”
- ▶ *Psych Nouns*
 - ▶ examples of systematic polysemy which coincides with countable/uncountable construals

Methodology:

- ▶ began with (up to) 200 countable and (up to) 200 uncountable noun occurrences in COCA
- ▶ supplemented by googling

Bodily and Mental States

Bodily and Mental States: *hunger, sleep, sickness, alertness, drowsiness, . . .*

There is a clear link for some nouns between state and uncountable readings

Sleep:

- (1) Time to get **some sleep** [non-count]

Bodily and Mental States

Count uses:

Event-anchored (see Huddleston et al. (2002)'s discussion of event "instantiation"):

- (2) Around **the sleeps of a five week old baby**, the delicate and dusty songs were recorded anywhere that was far away enough as not to wake her. (Google)
→ many sleeping events involving the same individual

Participant-anchored:

- (3) This disease has ruined **the sleeps of many people**.
(Google)
→ many individuals (cf. *the sleep of a five week old baby*)

Participant-anchored individuation

Different individuation possibilities are shown by nouns describing mental properties such as *intelligence*

- ▶ Permit participant-anchoring:
 - (4) Please, let's not insult **both our intelligences** by pretending this is open to question. (Google)
 - (5) We are mother and daughter team that have decided to put **our creativities** together and make a business that is 100% made in the USA. (Google)
- ▶ but no eventive reading

Event-anchored individuation

Still different individuation possibilities are shown by nouns describing qualities of social acts

- ▶ only allow the event-anchoring, and no participant-anchoring
- (6) Still, with a motorcycle she could leave the city on weekends, get away from **the often overbearing kindnesses of her boarding family**, the Harmses. (COCA)
- (7) And this in turn permitted **some alarming honesties** to be committed in public. (Christopher Hitchens, *No one left to lie to: the triangulations of William Jefferson Clinton*)

These instances make reference to events which manifest the named quality

Event-anchoring and the Stage/Individual Level Distinction

The different possibilities for individuating a noun would appear to be determined by the noun's meaning

The availability of event-anchoring seems to be at least partially correlated with stage-/individual-level distinction

- ▶ stage-level predicates are true of a temporal stage of its subject (*drunk*)
- ▶ individual-level predicates are true throughout the existence of an individual (*intelligent*)

Eventive Readings and the Stage/Individual Level Distinction

Proposed correlation: the event-anchoring occurs most happily with nouns related to stage-level predicates

- ▶ multiple stages are then countable

But this correlation is not straightforward and at best partial

- ▶ Stage/Individual-level distinction itself is vexed (Jäger 2001)
- ▶ Is probably only a necessary, but not sufficient condition:
drunkennesses but **nakednesses*

Participant Anchoring and Inherently Relational Nouns

Proposed correlation: The availability of participant-anchoring appears to be correlated with whether the noun is intrinsically related to participants

- ▶ *intelligence* is inalienably possessed:
 - ▶ possessor is already presupposed in the meaning of the noun
 - ▶ if more than one possessor is identified, then it can be counted
- ▶ *kindness* is not directly possessed and can only be identified via reification in social interactions

Classification of Nouns of Bodily and Mental States

States/qualities in their basic use may be uncountable, but can still have countable uses through anchoring

Noun	Event Anchor	Partic. Anchor
Type 1: <i>sleep</i>	Y	Y
Type 2: <i>intelligence, creativity</i>	N	Y
Type 3: <i>honesty, kindness</i>	Y	N

- ▶ these countable uses may not work for out-of-the-blue contexts, but arise when a certain amount of pragmatic pressure to distinguish, e.g., the participants, is present
- ▶ what anchoring is possible is constrained by what the noun means

Psych-nouns

Psych nouns: *annoyance, despair, fear, sorrow, pride* . . .

Psych-verb terminology:

- (8) Bob annoyed Jane.
Stimulus Verb Experiencer
“Object-experiencer”
- (9) Bob loved Jane.
Experiencer Verb Stimulus
“Subject-experiencer”

stimulus is used informally here to mean that which evokes the emotion

Psych-nouns

Nominal forms designate primarily the stimulus or the experiencer-state

Stimulus interpretation (*irritant*):

- ▶ is always countable

Psych-nouns

Experiencer's state interpretation (*irritation, despair*):

- ▶ is uncountable
- ▶ permit additional event-anchored readings, which are countable (compare *sleep*)

(10) Nobody has the right to be in that **much despair**. (COCA)

(11) But I am forgetting another characteristic, a very pronounced one. That was his deep glooms, his despondencies, **his despairs**; ... (Autobiography of Mark Twain)

Psych-nouns

Deverbal nouns that primarily designate an experiencer-state, which is uncountable (*much annoyance*), typically have an extended use to describe the stimulus (whatever evokes the emotion), which are countable (*several annoyances*)

- (12) a. The little Florian watched us with **some amusement**. (COCA)
- b. Skip could see clearly that someday he would be quite rich. Still, he was bored most of the time. **The amusements** he pursued, the girls, fooling the teachers, thinking about his money, did not keep him energized. (COCA)

▶ countability depends on the interpretation

▶ this is little discussed (compare result nominals)

Psych-Nouns

A comparable situation is found with qualities:

pride: core meaning designates a quality, but also has extended uses designating that which evokes the quality

- (13) Queen knighted Bouch for his achievement - **one of the prides** of Victorian engineering. [stimulus] (Google)

evil:

- (14) Why would we want to march in Indiana? Those good citizens already know **the evils** of abortion. (COCA)

Psych-nouns

Nouns may have multiple interpretations within the semantic domain, viz. stimuli and experiencer

- ▶ once the noun's interpretation is fixed, so is its countability

Noun	Stimulus	Exp-State	Event	Participant
Type 1: <i>annoyance, love</i>	Y	Y	Y	Y
Type 2: <i>pride</i>	Y	Y	N	Y
Type 3: <i>gloom, despair</i>	N	Y	Y	Y
Type 4: <i>irritant</i>	Y	N	N	N/A

Conclusion

- ▶ There is a consistent relation between a noun designating an event or a state and being countable or uncountable, respectively
 - ▶ a noun's countability comes from its interpretation in a particular use, not (generally) from its derivational source
- ▶ Individuation of abstract nouns can occur through “anchoring” in participants or event
- ▶ Anchoring is constrained by
 - ▶ noun meaning and context
- ▶ Nouns from certain domains have regular sense extensions (psych nouns)
- ▶ Much more to explore!

Thank you

Thanks to Beth Levin and Jason Grafmiller for discussion