ARGUMENT STRUCTURE FOR THE 21ST CENTURY

NOMINALIZATION

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WHY STUDY NOMINALIZATION?

- As nouns and the verbs they are derived from are (morphologically & semantically) related, we need to understand this complex relationship

- We further need to understand how the mixed verbal and nominal properties of nominalizations come about and how deverbal nouns differ from verbs

- By doing so, we probe into the building blocks of meaning

- Importantly, we test and enrich theories of argument structure (AS), as the question of whether or not nouns like verbs have AS is an issue of controversy

SOME CONSENSUS

- Nominalization is not a unified process
  - variation in patterns within and across languages, e.g. *Remarks on Nominalization,* discussing Lees's (1960) empirical domain: English gerunds and derived nominals

- Numerous studies of typologically diverse languages:
  - There is a lot of variation when it comes to the amount of nominal and verbal properties characterizing different nominalizations
  - Typically, as Chomsky (2020: 28) notes, one category of nominalizations is unproblematic, but applying the same mechanisms to all types of nominalizations is challenging/controversial

SOME QUESTIONS ABOUT AS

- **Question I**:

  Does AS in nominals emerge differently than in the verbal domain?

- **Question II**:

  Why need arguments not be present in nominalization?

- **Question III:**

  Why are nominal arguments encoded differently from verbal arguments, e.g. PPs/genitives?

SOME ANSWERS

- **Answers to Question I (*emergence of AS*)**:
  - *NO:* some version of the VP within nominals hypothesis, event structure in nominalization
  - *YES:* irrespectively of whether or not there is a verbal source in the nominalization
- **Answers to Question II (*obligatoriness of AS*)**:
  - Grimshaw (1990): once we concentrate on a particular type of nominals, presence of AS obligatory
  - Dowty (1989), Grimm & McNally (2013): nouns lack ordered arguments
- **Answers to Question III (*encoding of arguments*)**:
  - passive like structures
  - nominal structure responsible for the different encoding of (certain) arguments

COMPLEX EVENTS AND AS

- Recall Ramchand's contribution earlier

- The view that nouns lack ordered arguments rejects

(1) *The Argument Realization Principle* (Rappaport Hovav & Levin 2001: 779)

   There must be at least one argument XP in the syntax per subevent in the event structure

- In light of Ramchand's discussion, it is important to address the question of whether or not nouns just like verbs may express events of certain complexity, which in turn means that they are subject to the same priniciples guiding the emergence of AS

GRIMSHAW'S (1990) CONTRIBUTION

- Nominals are three-way ambiguous

  - Nouns denoting *complex events* (CENs), *the examination of the students*, like verbs have AS: they denote *events which can be broken into aspectual subparts*

  - Nouns denoting *simple events* (SENs) such as *trip* and *race* do not have AS

  - Result nominals (RNs) can be both derived or non-derived and do not have AS

  - Contrast between nouns that have AS (**ASNs**) and those that do not (**RNs** including both SENs and RNs) (Zubizarreta 1987, Borer 1993)

RNs	**ASNs**
No obligatory arguments	Obligatory arguments (where relevant)
No necessary event reading	Event reading
No agent-oriented modifiers	Agent-oriented modifiers
Subjects are possessives	Subjects are arguments
by phrases are non-arguments; in Spanish, selects de	by phrases are arguments; in Spanish, selects *por* where typically licit
No event control (implicit argument control)	Event control (implicit argument control)
No aspectual modifiers	Aspectual modifiers such as for three hours; in three hours
Modifiers like constant and frequent only with plural	Modifiers like frequent may occur without plural
Post-nominal genitives possible	Post-nominal genitives impossible
Pluralize, allow one, a, that determiners	Do not pluralize, do not allow one, a, that determiners
May be predicates	may not be predicates

Grimshaw's diagnostics, adapted from Alexiadou & Borer (2020: 11)

SOME ISSUES

- SENs: problematic, as they denote events but lack AS, Borer (2013), Moulton (2014)
- Diagnostics do not hold cross-linguistically or within a language:
  - *pluralization* (Mourelatos 1978, Borer 2005, Roodenburg 2010, Alexiadou, Iordăchioaia & Soare 2010, Grimm & McNally 2013, Lieber 2016 and others)

(2) I heard of repeated **killings** of unarmed civilians.

- This criterion needs to be relativized to take (a)telicity into consideration: nominalizations of atelic predicts resist pluralization
- Cross-linguistic differences with respect to plurality, Roedenburg (2010)?

SOME ISSUES

- Nominals more flexible than predicted by this typology

(Grimm & McNally 2013, their examples below, Lieber 2016):

- *aspectual PPs with synthetic compounds*

(3) Rosenblatt and co-authors (1987) also reported that at least 40 mg/L ClO_2 **gas treatment for one hour**... (COCA)

- *by phrases in the absence of an internal argument*

(4) How does a country recover from 40 years of destruction **by an unchallenged tyrant**? (Newsweek)

EVALUATION

1. We sharpen the notion event complexity, as in Ramchand's contribution

2. We re-consider SEN formation (Alexiadou 2009, Harley 2009, Borer 2013) and SEN semantic composition (lack of sub-event complexity, Moulton (2014));

3. We re-consider the relationship between *Aktionsart* and Number and between nominal and verbal layers in nominals

4. We ask whether synthetic compounds have AS or not (Grimshaw 1990, di Sciullo 1992, Iordăchioaia et al. 2017, cf. Borer 2013)

5. We study other languages, as *of* and *by* are independently allowed in English nominals, e.g. *a book by Chomsky*, *a tale of two cities* (Alexiadou 2001, Borer 2013, Fabregas 2014; Greek, Hebrew, Spanish)

HOW DOES AS EMERGE IN NOMINALS?

- The verbal/complex event substructure hypothesis:

    - Only nominalizations that have a complex event structure can have arguments

    - The complex internal structure of verbs, along the lines of Ramchand's presentation, is included within nominals

    - Those nominalizations that have arguments do so because they contain verbal layers that realize this event complexity, as in Harley's contribution

Roeper (1987); Hazout (1995); Valois (1991); Picallo (1991), Borer (1991/3, 2013, 2020), Picallo(1991), Harley & Noyer (1998), van Hout & Roeper (1998), Borsley & Kornfilt (2000); Fu, Roeper, & Borer (2001); Alexiadou (2001) and many others

WHAT ABOUT RNS?

- Nouns that lack aspectual subparts may combine with other nouns

- Several proposals in the literature on possession and relational nouns

(e.g. Barker (1995), Partee & Borschev (2000); syntactic research following Kayne (1993); Baker (2003), Den Dikken (2006), Adger (2013), Myler (2016) and many others)
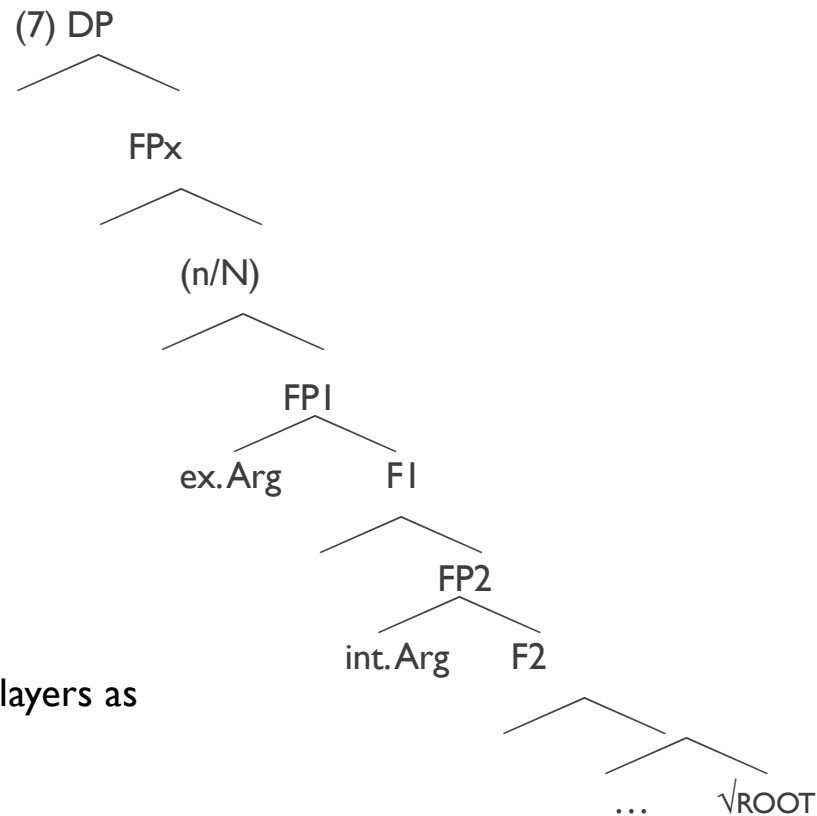
(5) John's dog ≠ the building's construction

- Genitives in ASNs differ from possessors, Grimshaw (1990: 97):

(6) *The construction was the building's. vs. The dog is John's.

A STRUCTURE FOR ARGUMENTS IN NOMINALS

adapted from Alexiadou & Borer (2020: 9);

FP1/FP2 neutral with respect to labelling; phrasal layers as opposed to complex N-V head, Wood (2020)

(7) DP
    FPx
        (n/N)
            FP1
          ex. Arg   F1
                    FP2
                int. Arg   F2
                          …   √ROOT

SOME COMMENTS

- Basic units of word formation, roots in combination with functional heads

- Nominalization involves combination of layers introducing arguments (and maybe other functional layers) with nominalization affix at the n/N layer or with D (for clausal nominalization)

- Hierarchical representation of argument positions correlating with the hierarchical position of the subevent they are related to; Roots do not introduce arguments

ARGUMENTS IN NOMINALS

- **FP1$_{ex.Arg}$ and FP2$_{int.Arg}$ both present in nominalization:**

(8) John's destroying the manuscript shocked his publisher.

- **Only FP2$_{int.Arg}$ present in nominalization:**

(9) The destruction of the manuscript shocked the publisher.

- **Neither FP1$_{ex.Arg}$ nor FP2$_{int.Arg}$ present in nominalization, not an ASN:**

(10) Hurricane Dorian leaves a terrible destruction in Bahamas.
 (https://www.washingtonpost.com)

FUNCTIONAL NOMINALIZATION

(11) *The Functional Nominalization Thesis*
Nominal properties of a nominalization are contributed by a nominal functional projection. The nominalization has verbal properties below the nominal functional projection, nominal properties above it

(Borsley & Kornfilt 2000, Kornfilt & Whitman 2011, Alexiadou, Iordăchioiaia & Schäfer 2011, cf. Panagiotidis 2014, Iordăchioaia 2020, Alexiadou 2001, 2020)

- 'a nominal functional head selects a verbal projection and "closes off" the verbal properties of the structure: It is verbal below that point and nominal above.'
(Kornfilt & Whitman 2011: 1298)

HEIGHT OF AFFIXATION

- Functional sequence

(Chomsky 1995, Cinque 1999, Ramchand & Svenonius 2014, cf. Hiraiwa 2005, Wiltschko 2014):

(12) CP > TP > AspectP > FP1 > FP2

- Height of nominalization affix leading to a rich typology of nominalizations, cf. Hoekstra's (1986) idea of different levels of projection; in addition to argument introducing heads, other functional categories may be present

    - Low vs. high nominalizations

    - High nominalizations = several verbal properties, include Aspect, TP or even CP

    - Low nominalizations = fewer verbal properties, include maybe both FP1 and FP2 or only FP2

CORRELATIONS

- The more verbal the properties, the more likely it is that both FP1 and FP2 will be present (functional sequence in (12))

- The less verbal the properties, the less likely it is that both FP1 and FP2 will be present

- Rich literature on diagnostics detecting verbal and nominal properties (determiners, types of modifiers, case patterns etc.)

HEIGHT AND ARGUMENTS

- Presence and encoding of arguments correlated with amount of verbal/nominal properties

- High nominalizations: both arguments present, external arguments may bear genitive, internal bears accusative (English gerunds, Abney 1987)

- Low nominalizations: maybe only internal arguments present, these bear genitive (English derived nominals)

ENCODING OF ARGUMENTS

- External arguments
  - as PPs: process of nominalization involves some change in valency, cf. Williams (1981)
    - nominalization as passivization
    - nominalization as subject to an unaccusativity requirement

    (Grimshaw (1990,) Alexiadou (2001), Bruening (2013), Imanishi (2014); cf. Borer (2013))

  - as genitives: related to D layer, Abney (1987)
- Internal arguments as genitives: genitive is default nominal case (Marantz (1991), Baker (2015); absence of external argument)

SUMMARY & CONCLUSION

- The study of different types of nominalizations furthers our understanding of word formation processes and the building blocks of meaning

- It is an important testground for theories of word formation and AS

- In conclusion:

  - If arguments are introduced hierarchically in association with event complexity in the verbal domain, nouns derived from verbs are built on the basis of the same building blocks

  - In addition, grammar has further mechanisms in place to introduce nominal satellites in the absence of event complexity

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