Categorization and Nominalization in Zero-derived Nouns

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Chomsky's (1970) *Remarks on Nominalization* primarily dwelled on the dichotomy between 'syntactic' nominalizations like the gerund and the 'lexical' ones, which form his class of derived nominals. Interestingly, however, his observation that mixed nominalizations like the *ing-of* gerund share properties with both classes opened the path to a long-lasting research program on the diversity of nominalizations in terms of how close to or far away from the verbal base they can be in meaning and morphosyntactic behavior (e.g., Grimshaw 1990, Zucchi 1993). In syntax-based theories of word formation such as Distributed Morphology (DM) and the Exo-skeletal Model (XSM), which implement Chomsky's (1970) thesis for 'neutral' category-less 'lexical entries' in the shape of acategorial roots, this array of different nominalizations is captured in terms of how much structure these nominals share with their base: it may be just the root (as for Grimshaw's result nominals), the full event structure of a verb (as in argument structure nominals or Grimshaw's complex event nominals) or even sentence-like structures such as TPs or CPs (as in English gerunds or Spanish infinitives; see Alexiadou et al 2011, Borer 2013 for overviews and references). It is the mixture between the first two types of derived nominals that interests me here, as exemplified by zero-derived nouns (ZNs), and I will show how the root ontology of the base verb influences the possibility of ZNs to nominalize either roots or verbal event structure, just like suffix-based nominals.

Zero-derived nouns (ZNs). In her distinction between derived nominals that inherit verbal event and argument structure (here, argument structure nominals: ASNs) and those that do not (i.e., result nominals: RNs), Grimshaw (1990) includes ZNs in the latter category, arguing that they never inherit verbal event and argument structure. In a more recent and systematic implementation of the same idea in XSM, Borer (2013) analyzes ZNs as categorized roots. From a DM perspective, which implements lexical categorizers (Marantz 2001, 2007), ZNs would be simple categorizations of roots as nouns, i.e., there is no difference in the derivation of the lexical noun *cat* and the ZN *walk* -- both are root-derived as in (1), and ZNs do not involve any category changing process of 'nominalization', as instantiated by ASNs, as in (2).

(1) a. $[_{nP} Ø_n [\sqrt{WALK}]]$ (ZN *walk*)   b. $[_{nP} Ø_n [\sqrt{CAT}]]$ (lexical noun *cat*)

(2) $[_{nP} ing [_{VoiceP} John [_{vP} the book [_{vP} Ø_v [\sqrt{READ}]]]]]$ (ASN *John's reading of the book*)

Plenty of examples have been provided in the literature to show that ZNs do not realize argument structure (as in (3) from Borer 2013) but the counterexamples to this claim have not been fewer, as especially presented in lexicalist approaches (Newmeyer 2009, Lieber 2016) but also acknowledged in the syntactic literature (Alexiadou et al 2007, Borer 2013): see (4).

(3) a. the **importation**/****import** *of goods* from China in order to bypass […] regulations
    b. the **walking**/****walk** of the dog for three hours

(4) a. the frequent **arrest** *of Iowa college football players*
    b. *an officer's* too frequent ***discharge*** *of a firearm*

In what follows I aim to explain why some ZNs may realize argument structure, while others systematically do not, by looking at verbs built on two types of state roots.

Change of state meaning requires a verb category. Beavers & KG (to appear) argue that state roots may express *property concepts* (PC: *large, hot, slow, angry, hurt*) or encode *change of state* (COS: *break, crash, boil, rise, fall, burn, murder, kill*) with a crucial impact on their lexicalization. KG et al (2019) further show that PCs may be encoded by all lexical categories crosslinguistically, but polysemous/labile PC-COS words are usually categorized as verbs. From this, they conclude that COS semantics must be lexicalized by verbs. For the present purposes, this thesis predicts that, if we find ZNs derived from COS verbs that preserve a COS meaning, they

should inherit at least the verb category (the *v*P in (2)) required by the COS meaning, and, implicitly, also realize AS. I provide support for this claim by comparing ZNs derived from psych verbs (which are built on PC roots) with ZNs derived from COS verbs and showing that the latter may include a *v*P and realize AS, as predicted, but the former do not.

Alexiadou & Iordachioaia (2014) argue that psych verbs in English do not encode COS events, which is why they also fail to display a causative alternation. The implication is that deverbal psych nouns should not express COS either, and this is confirmed by their failure to form ASNs (see (5a) vs. (5b); Lakoff 1970, Grimshaw 1990, Pesetsky 1995). As Iordachioaia, Alexiadou & Soare (2015) argue, psych nominals primarily denote states and are derived from the root, not the verb: their compatibility with *persist* and the incompatibility with *happen* in (5b) show that they are states and not events. Some psych nouns realize eventive ASNs with agents as in (5d), but I will argue that these instantiate coercions into COS uses, since they do not appear with all nouns derived from psych verbs that can be agentive (see examples in (5d)).

(5) a. *the doctor's **depression/amazement/anger/surprise/bother** of the patients
    b. *Her* **surprise** *at*/**amazement** *with the news* [persisted for 2h/*happened in the room].
    c. the *hurricane's* **destruction** *of the city*
    d. *the clown's* **amusement**/***annoyance**/**torment**/***anger** *of the audience*

Experiencers may always be realized in psych nouns, as they come with the root (cf. deadjectival *John's sadness*); other arguments representing the stimulus of the psych state may also be realized with root-specific PPs (see *at the news* in (5b)), which indicates that they are not event structure arguments (Grimshaw 1990, Pesetsky 1995): e.g., *Sam's love/hate **for/*of** Mary*; *Sam's annoyance **with/*of** Jim*. These facts show that psych ZNs do not differ from the suffix-based ones (both realize root arguments) and represent categorizations of roots, as in (1).

By contrast, many ZNs derived from COS verbs instantiate COS readings, on which they realize internal arguments as in (6a); some also have externally caused uses, as in (6b), just like ZNs derived from externally caused verbs in (6c). This confirms their ASN status and their hosting of at least a *v*P, as in (2). Some of these ZNs express only results (RNs *break*, *crack*), but such idiosyncrasies are typical of derived nominals (see Grimshaw 1990, Lieber 2016).

(6) a. the crash *of Flight 93*; the slow boil *of the soup*; the melt *of ice*; the recent fall *of dictators*
    b. *Kruschev's* thaw *of Stalinism*; Coast Guard begins controlled burn *of oil* in Gulf
    c. [he] witnessed *their* murder *of his mother*; legalizing the on-site kill *of meat animals*

Conclusion. This paper supports three claims. First, the ontology of the root plays an important role in the interpretation and the AS-realization potential of derived nominals, since derived nominals built on PC roots do not form any ASNs, while those built on COS roots do. Second, the overtness of the nominalizing suffix does not play the crucial role that has been assumed in the previous literature, concerning the derived nominal's ability to inherit verbal event structure and form ASNs: namely, like suffix-based derived nominals, ZNs may instantiate both categorizations of roots (see psych ZNs), and nominalizations of verbal event structure (see COS ZNs). Third, this study brings additional support for KG et al.'s (2019) hypothesis that COS meaning must be encoded by verbs, confirming a much-desired semantic argument (next to the usual distributional facts, Baker 2003) in identifying the lexical category of verbs.

Selected references: **Alexiadou, Haegeman & Stavrou. 2007**. Noun phrase in the generative perspective. Berlin: de Gruyter. **Alexiadou & Iordachioaia. 2014**. The psych causative alternation. Lingua 148. **Alexiadou, Iordachioaia & Schäfer. 2011.** Scaling the variation in Romance and Germanic nominalizations. The Noun Phrase in Romance and Germanic. Amsterdam: Benjamins. **Beavers & Koontz-Garboden. To appear.** The roots of verbal meaning. Oxford: OUP. **Borer. 2013.** Taking Form. Oxford: OUP. **Iordachioaia, Alexiadou, Soare. 2015.** The structural source of stative nominalizations from psych verbs. Taming the TAME systems, Leiden/ Boston: Brill Rodopi. **Koontz-Garboden, Beavers, Bochnak, Bowler, Everdell, Francez, Hanink, Jerro, LeBovidge & Nichols. 2019.** State/change of state polysemy and the lexical semantics of property concept lexemes. Handout, May 14. **Lieber. 2016.** English nouns. The ecology of nominalization. Cambridge: CUP.