Gianina Iordăchioaia, Susanne Schweitzer, Yaryna
Svyryda & María Camila Buitrago Cabrera

Deverbal zero-nominalization and verb classes: Insights from a database

Abstract: We investigate deverbal zero-derived nominals in English (e.g., *to walk* > *a walk*) from the perspective of the lexical semantics of their base verbs and the interpretations they may receive (e.g., event, result state, product, agent). By acknowledging that, in the absence of an overt affix, the meaning of zero-nominals is highly dependent on that of the base, the ultimate goal of this study is to identify possible meaning regularities that these nominals may display in relation to the different semantic verb classes. We report on a newly created database of 1,000 zero-derived nominals, which have been collected for various semantic verb classes. We test previous generalizations made in the literature in comparison with suffix-based nominals and in relation to the ontological type of the base verb. While these generalizations may intuitively hold, we find intriguing challenges that bring zero-derived nominals closer to suffix-based nominals than previously claimed.

Keywords: morphology, lexical semantics, zero-derived nominals, manner and result verbs, argument structure

1. Introduction

Zero-derived nominals (ZNs) are deverbal nominalizations that do not show any overt marking compared to suffix-based nominalizations (SNs), which involve overt nominalizing suffixes, as illustrated in (1). ZNs are also known as conversion nouns.

(1) a. to walk – the walk-Ø (ZN) – the walk-**ing** (SN)
    b. to invite – the invite-Ø (ZN) – the invit-**ation** (SN)

English ZNs have not received much attention in recent generative literature, despite having sparked more interest in earlier studies such as Marchand (1969), Irmer (1972) or Cetnarowska (1993), which recognize their intriguing semantic and morphosyntactic properties (but see also the discussion on Borer 2013 in section 2.2.). Generative literature has neglected ZNs in favor of two competing formations: denominal zero-derived verbs and suffix-based nominalizations.

On the one hand, the study of conversion/zero-derivation has mostly dwelled on zero-derived verbs (ZVs), which are fully productive in English. As shown in Clark & Clark (1979) and Rimell (2012), in principle, any

noun can be converted into a verb, provided an appropriate context and essential common ground knowledge shared among the participants: see (2):

(2) a.   He **wristed** the ball over the net.   (Clark & Clark 1979: 767)
     b.   My sister **Houdini'd** her way out of the locked closet. (Clark & Clark 1979: 784)

By contrast, ZNs show lexical gaps: as Cetnarowska (1993: 19) notes, pairs of phonologically and morphologically similar verbs, as in (3), fail to systematically build ZNs.

(3) a.   to permit – the permit   vs.   to submit – *the submit (cf. the submission)
     b.   to flow   – the flow   vs.   to grow   – *the grow (cf. the growth)

On the other hand, studies on nominalization after Chomsky (1970) have mostly been devoted to SNs, which include Chomsky's 'mixed forms' with the suffix *-ing* and Borer's (2013) 'ATK-nominals' (i.e., *-ATion* and Kin), which involve Latinate suffixes (i.e., *-(at)ion*, *-ment*, *-al*, *-ance*). ZNs are usually mentioned for contrastive purposes, to argue, for instance, that they are morphosyntactically and semantically simpler than SNs (but see Alexiadou & Grimshaw 2008, Wechsler 2008, Harley 2009, Fábregas 2014 for additional observations). In her seminal work, Grimshaw (1990) claims that ZNs fail to inherit the event structure of their verbs, since they cannot realize argument structure (AS) on event readings such as in (4), from Borer (2013: 332), where allegedly only the SN is compatible with the internal argument and the purpose clause:

(4) the **importation/*import** *of goods* from China in order to bypass ecological regulations

This paper uses a substantial new resource of 1,000 English ZNs to investigate their semantic and morphosyntactic properties in relation to the lexical semantics of the verbs that they are derived from. While this study is part of ongoing research, this paper draws on some preliminary conclusions from the database to evaluate previous generalizations.

Section 2 provides a summary of previous observations on ZNs proposed in the generative literature. Section 3 describes the new database used in our investigation. The main discussion of our research questions comes in section 4, and we present our conclusions in section 5.

2. Previous generalizations on zero-derived nominals

2.1. Argument structure nominals vs. result and simple event nominals

Grimshaw (1990) distinguishes between two categories of deverbal nominals: i) what she calls 'complex event nominals' and we refer to as *argument*

structure nominals (ASNs), following Borer (2013), and ii) 'result nominals' (RNs) together with 'simple event nominals' (SENs), which are often grouped under the term 'referential nominals' from Borer (2013). The crucial difference between the two groups is that ASNs inherit the event structure of their base verbs, which is reflected in their obligatory realization of AS, while RNs and SENs lack these verbal properties and behave like lexical nouns.

Grimshaw (1990: 49–59) illustrates this contrast with examples as in (5). On its ASN reading, *examination* in (5a) combines with predicates of events like *took a long time*, realizes both internal and external arguments, and its compatibility with the agent-oriented adjective *intentional* confirms that *the instructor's* is the external argument, and not just a possessor. On its RN reading in (5b), the noun is synonymous with *exam*, disallows the internal argument *of the papers*, and combines with predicates of individuals like *was on the table* in (5b). The SEN reading in (5c) resembles the ASN in referring to events, yet, in the absence of the internal argument (which is hierarchically realized before the external one), it behaves like other event-denoting lexical (i.e., underived) nouns such as *trip*; the incompatibility with *intentional* indicates that SENs do not realize external arguments but just possessors.

(5) a. *The instructor's* (intentional) **examination** *of the papers* took a long time. (ASN)
     b. *The instructor's* **examination**/exam (*of the papers) was on the table. (RN)
     c. *The instructor's* (*intentional) **examination**/trip took a long time. (SEN)

The distinction between ASNs and RNs is usually straightforward due to the meaning difference: RNs usually refer to objects/individuals, while ASNs refer to events. The more difficult task is to differentiate between ASNs and SENs, which both denote events. Additional aspectual tests for event structure are usually necessary (see Roy & Soare 2013).

In syntactic models of word formation such as Distributed Morphology (DM; Marantz 1997, 2013, Harley and Noyer 2000, Alexiadou 2001) and Borer's (2013) Exo-Skeletal Model (XSM), the two types of nominalization have found a natural implementation along two patterns of word formation, illustrated in (6) for DM: i) RNs and SENs represent root-based derivations, as in (6a), while ii) ASNs instantiate word-based derivations, as in (6b).

(6) a. [$_{DP}$ D [$_{nP}$ n   [√ROOT]]]   (RN/SEN: no event structure)
     b. [$_{DP}$ D [$_{nP}$ n [**Ext-vP** [$_{vP}$ v   [√ROOT]]]]]   (ASN: with verbal event structure)

While in (6a) *n* – typically realized by a nominalizing suffix like *-ation* – assigns the noun category to the root, in (6b) *n* changes the category of a categorized word (the *v*P or an extended projection Ext-vP of it) into a noun. The two levels of derivation involve crucially different morphosyntactic and

semantic properties. Root-derivation predicts i) negotiation of idiosyncratic meanings of the root in the context of the first categorizing node, leading to polysemy (e.g., both RN and SEN readings are possible in (5b, c)); ii) limited productivity; iii) phonological changes on the root triggered by the suffix; iv) absence of argument structure, which is usually hosted by extended functional structure unavailable in (6a). In contrast, word-level attachment predicts i) compositional meaning derived from the functional structure of the base; ii) apparent (greater) productivity; iii) no phonological changes on the root; iv) realization of argument structure when the appropriate extended projections are available (see (5a)). This distinction is maintained in Borer's XSM to some extent, although she denies lexical categorizers like *n/v* and assumes that roots are indirectly categorized by corresponding functional material in whose nominal/verbal context they are realized.

2.2. Zero-derived nominals from the ASN vs. RN/SEN perspective

Grimshaw (1990: 67) briefly mentions ZNs as always realizing referential nominals (i.e., RNs or SENs) in contrast to *ing*-nominals, which she takes to typically realize ASNs, while ATK-nominals are usually ambiguous between ASN and referential RN/SEN readings in her view.

Borer (2013: ch. 7) is the first extended study of ZNs from the perspective of the ASN vs. RN/SEN dichotomy. She provides three main arguments in support of Grimshaw's thesis and a root-derivation comparable to that in (6a). First, she claims that ZNs do not form ASNs, as illustrated in (4), although she admits that some 'exceptionally' do so: (*ex*)*change*, *release*, *use*, *misuse*, *abuse*, *murder*, *rape* (Borer 2013: 331; cf. Wechsler 2008, Harley 2009, Newmeyer 2009, Lieber 2016).

Second, she shows that ZNs cannot be formed from verbs that involve overt verbalizing suffixes such as *-ize* and *-ify*, which realize the *v* head in (6b), indicating that they cannot instantiate such a structure, as overt suffixes in ATK-nominals usually do:

(7) a. to crystal(l)-**ize** – *the crystal**lize** – the crystallization
     b. to acid-**ify**   – *the acid**ify**   – the acidification

Third, Borer highlights the ability of ZNs to exhibit stress shift (cf. Marchand 1969: 378, Kiparsky 1982, Cetnarowska 1993: 34–35, Hurrell 2001), which suggests that their formation triggers phonological changes on the root, as expected in root-derivation, as in (6a):

(8) a. to im**pórt**   – the **ím**port
     b. to tor**mént**   – the **tór**ment

In a footnote, Borer (2013: 331, fn. 13) claims that ZNs that exceptionally realize argument structure also block stress shift, which indicates that these may form ASNs and, if they do, they must involve some suprasegmental suffix phonologically strong enough to block stress shift. This can be observed by comparing ZNs of Latinate origin like *reléase* in (9) and *ímport* in (4): the former preserves the verbal stress pattern on the final syllable and can realize argument structure, while the latter shows stress shift and allegedly fails to realize arguments.

(9) the **reléase** *of prisoners of war* by Iraq

Following these arguments, Borer (2013) concludes that ZNs form only RNs or SENs and should receive an analysis as in (10a), where a root like √WALK is indirectly categorized as a noun by a nominal extended projection like D. When the same root appears in the context of a verbal extended projection like T, it becomes a verb, as in (10b). Both structures would correspond to the DM root-derivation in (6a).

(10) a. [DP D [√WALK]]]   b. [TP T [√WALK]]]

Our study casts doubts on this analysis, by showing that, depending on the verb class, quite a few ZNs may realize AS and, importantly, availability of stress shift does not prevent AS-realization, which challenges both Borer's analysis and the dichotomy in (6).

2.3. ZNs in the result-manner verb dichotomy

Another argument that could further support this kind of analysis of ZNs comes from research on verb meaning. Rappaport Hovav & Levin (1998 and subsequent work) argue for a split among verbs depending on the ontology of the root that they lexicalize. They distinguish between result and manner verbs: the roots of the former denote the result state of the event lexicalized by the verb, while the latter specify the manner in which the event is carried out. For transitive verbs we can test the two different types by denying their typical result state: with result verbs one cannot deny the result state that they lexicalize (see use of *dirty* with *to clean* in (11a)); however, the result state that one would typically assume for a manner verb can easily be denied, as in (11b) (cf. further tests in Beavers & Koontz-Garboden 2020).

(11) a. I **cleaned** the tub, #but it is still *dirty*.   (result verb)
      b. I **scrubbed/wiped** the tub, but it is still *dirty*.   (manner verb)

In their discussion of morphosyntactic tests to distinguish the two verb types, Levin and Rappaport Hovav argue that if a verb forms a ZN, and the ZN receives a result (i.e., RN) interpretation, this indicates that it is a

result verb, while if the ZN has an event (i.e., SEN) interpretation, the base is a manner verb (Levin 1993: 8, Levin & Rappaport Hovav 2013). Based on this evidence, they argue that *cut* and *break* are result verbs because their ZNs denote results, while *touch* and *hit* are manner verbs, as their ZNs denote (manners of) events.

Although Levin and Rappaport Hovav do not analyze ZNs, their reasoning would support a root-derivation, to the extent that ZNs are expected to be fully faithful to the ontology of the root: a result root will yield result ZNs, and a manner root will yield event ZNs.

Our investigation of ZNs based on manner and result verbs will show that Levin and Rappaport Hovav's intuition about the faithfulness of ZNs to the root holds for some but not all (sub)classes. We find event readings with result verbs, some of which also realize argument structure, which suggests that ZNs may also be more complex than root-derivations.

2.4. Research questions

Making use of our database of ZNs, as described in section 3, we aim to test the following generalizations made in the literature summarized above:

1) ZNs derived from manner verbs are SENs, and those formed from result verbs are RNs.
2) ZNs do not generally form ASNs; the exceptional AS-ZNs block stress shift.

If we go back to the two DM word-formation patterns in (6), we see exactly how these properties lead to a root-derivation of ZNs: root-derivations allow phonological changes on the root and cannot include argument structure. Co-occurrence of argument structure and stress shift is banned, since they associate with different patterns. Note, though, that the faithfulness of ZNs to the root ontology assumed by Levin and Rappaport Hovav is more restrictive than predicted by (6a), which in principle allows SEN-RN polysemy.

In testing these hypotheses, we also aim to identify meaning regularities among ZNs derived from the same verb class and to find out which classes are likely to build AS-ZNs.

3. The database of zero-derived nominals

The current database contains 1034 ZNs and was created in order to investigate how the meaning and the ASN-potential of ZNs depend on the semantic classes of their base verbs.

The directionality from V-to-N or N-to-V is an unsettled issue in the literature on zero derivation (see Balteiro 2007, Bram 2011 for criteria and literature overviews). First, it should be noted that on a root-based derivation of

ZNs (as in (6a)), the issue of directionality disappears, since the assumption is that both ZNs and ZVs are derived from an underspecified root. Second, for our database we collected nouns zero-related to verbs of particular semantic classes and so, to the extent that we find semantic regularities expected for V-to-N derivations, these support the derivational direction for that class. Thus, (instance of) event or agent readings are expected to originate in verbs rather than in nouns (Marchand 1963; cf. Kisselew et al. 2017). Our use of semantic verb classes potentially offers a better grounded explanation for Marchand's (1963) reasoning in distinguishing between noun groups corresponding to *father* and *bridge*, as bases for ZVs, and those like *cheat* and *look*, as ZNs, but this remains to be confirmed by a closer analysis. Third, the nouns in our database are first attested after, at the same time, or not long before their base verbs.[1] Historical attestation is not always a reliable criterion, but is useful as additional support (Plag 2003, Bram 2011).

We started with a list of ZNs documented by the Oxford English Dictionary (OED), which includes about 2,800 items, from which we extracted the ZNs first attested starting with 1860. This section of the database includes 573 ZNs and was created in order to find out which morphological patterns of ZNs have been formed in recent times. Almost half of these recent ZNs are derived from morphologically complex verbs (with particles or prefixes), which we describe in Section 4.1.1. Furthermore, we checked several semantic classes that would correspond to the result and manner root types on the basis of two sources. We started with Levin's (1993) verb classes by checking, for each verb, if it had a corresponding ZN, according to the OED. Given that many of Levin's classes are very numerous, with most verbs not forming ZNs, we then turned to Irmer's (1972) semantic lists of ZNs and mapped them onto Levin's relevant classes, some of which we present in Section 4.

For each ZN entry we recorded various information from the OED online: date of attestation of the noun/verb, (Latinate/Germanic/Anglo-Saxon etc.) etymology,[2] frequency of the noun/verb, whether it involves stress shift, and their possible readings. We further added the verb class recorded for the base verb in VerbNet and searched natural text corpora for possible examples of

---

1 About 2.6% of the database represent ZNs whose attestation date is more than two decades earlier than that of the verb and they were included because the OED or Irmer (1972) records them as ZNs.

2 Our database includes originally borrowed ZNs like *change* and *collapse*. If there is a corresponding verb belonging to a semantic verbs class for which English shows ZN formation, we consider such old borrowings to be synchronically analyzed as ZNs. This assumption would be worth testing experimentally, as in Darby (2015).

ZNs realizing verbal arguments. The corpora we searched are the Corpus of Contemporary American English (COCA), News on the Web (NOW), and Corpus of Global Web-based English (GloWbE), all available at www.english-corpora.org (Davies 2008–, 2013, 2016–). VerbNet is an extended version of Levin's (1993) verb classes with online access at https://verbs.colorado.edu/verb-index/vn3.3/ (Kipper Schuler 2005). It includes at least 108 verb classes, some of which may comprise a few hundred words or less than a dozen. Many classes have several subclasses, following Levin's model. Our database includes ZNs derived from 72 such verb classes, 21 of which have only one ZN, and 177 ZNs without a VerbNet class.[3] Many verbs are cross-classified and, in these cases, we focused on the verb class(es) that best represented the meaning of the ZN. Nevertheless, about 180 ZNs in our database relate to more than one verb class.[4]

There is no exhaustive description as to which of these verb classes lexicalize manner or result, and one may even need to distinguish between their subclasses in this respect (e.g., Levin's result *murder* verbs vs. manner *poison* verbs, both verbs of killing). Here we report on the verb classes in (12), which have been discussed in the literature as lexicalizing result and manner, although polysemy covering both types or a combination of both cannot be excluded (see Levin & Rappaport-Hovav 2013, Beavers & Koontz-Garboden 2020 for discussion). Individual examples and discussion will be offered in Section 4.

(12) a. **Result verb classes**: verbs of change of state, psych verbs, verbs of cutting, verbs of killing, morphologically complex verbs
      b. **Manner verb classes**: verbs of motion, verbs of communication, verbs of emission, verbs of contact

An important task was to categorize the different ZN senses reported in the OED in relation to the meaning of the verb and the typical interpretations of derived nominals. To define them, we follow Lieber (2016:18), with small adjustments. These readings belong to two categories: event-related and participant-related. The former denote the eventuality of the base verb, as in (13a), and the latter some participant in the eventuality, as in (13b).[5]

---

3 For the verbs we could not find in VerbNet we sometimes inserted the verb class of a close enough synonym. For morphologically complex verbs we checked the class of the main verb.
4 In future research we aim to draw statistically relevant implications from this database.
5 We also collected readings about measure (e.g., *melt* 'quantity of metal melted at one operation') and location (e.g., *walk* 'place or path for walking'), which are rare but would belong to the participant-related group.

(13) a. **Event-related ZN readings:**
      event (the action of V-ing): *fall, collapse, murder, run, walk*
      instance (an act of V-ing): *click, kiss, plunk, pat, pop*
      state (the state of V-ing/being V-ed): *daze, shock, sorrow, concern, dread*
      result state (the state brought about by having V-ed): *collapse, meltdown, decrease*

    b. **Participant-related ZN readings:**
      result entity/product (the thing that is produced by V-ing): *cut, chant, crack, bruise*
      agent (the person who V-s): *cook*, *guide*, *kick* (as one who kicks), *dispatch* (agency)
      cause (the thing that V-s): *wilt* (as disease), *surprise, wonder, trouble*
      instrument (a thing to V with): *nudge, drill, smell* (as the sense)

In Table 1 we offer a few simplified entries from our database, with their classified OED senses. The event reading best matches the meaning of the verb, and it is on this reading that ZNs should realize AS (with verbal event structure). The instance reading resembles SENs and may include more idiosyncratic readings such as the manner of the event (e.g., *His walk was cocky*: OED). The result entity/product reading best relates to RNs and also comprises several types of meanings exemplified in Table 1: e.g., a created product such as *cut*, a patient (which was not created but underwent a change of state via the event: see *change*, *melt*, *transport*), or even something abstract coming about via the event, such as *walk* 'procession'.

Tab. 1: Samples of ZNs with their readings from the database.

ZN	Verbnet class	Event	Instance	(Result) State	Product/ Result Entity	Agent/ Instr/ Cause
murder	Verbs of Killing	The action of killing	An act of killing	no	no	no
melt, n3	Verbs of Change of State	The action of melting	no	no	A substance which has melted	no
change	Verbs of Change of State	The action of substituting one thing for another	An instance of this	An alteration in the state or quality of something	Something that may be substituted for another thing	no

cut, n2	Verbs of Cutting	no	Act of cutting; a stroke or blow with a sharp-edged instrument	no	Product of cutting; shape cut off; a piece cut off	no
wonder	Psych verbs	no	no	The state of mind in which this emotion exists	no	Some-thing that causes aston-ish-ment; a won-derful thing
transport	Psych-Verbs; Verbs of Sending and Carrying	The action of carrying/ conveying a thing or person from one place to another	no	The state of being 'carried out of oneself'; ecstasy	A transported convict (rare)	A means of trans-porta-tion
row-over	Verbs of Sending and Carrying [row]	no	An instance of rowing over	no	no	no
walk	Verbs of Motion	The action of traveling or wandering	An act of traveling or wan-dering	no	A journey; a proces-sion	no

For the database, we did not apply distributional tests to systematically delimit these readings from one another, and in what follows we focus on broad semantic distinctions relevant for our questions: e.g., (instance of) *event* vs. *state* vs. *product/result entity* vs. *agent/instrument/cause*. In classifying these readings, we had to assess which senses from the OED best suited these groups. We did not classify all OED senses; we looked for those that came closest to our meaning classes and recorded the most common ones when several qualified for the same class. Sometimes the OED offers straightforward definitions: see the event, instance or even state readings in Table 1. However, this was not always the case and, working on the database,

we developed several conventions: if a ZN was defined by an *-ing* nominal (which usually refers to processes), we took this as a clear event reading; if it was translated by an ATK-nominal, we further checked whether it was an event or a state, or even both. For most senses, we used our intuitions, and critical cases were discussed among the four of us.[6] However, inaccuracies cannot be entirely excluded, as is common with human annotation. The data reported here have gone through an additional cycle of verification.

Coming back to the patterns in (6), we note that the event-related readings of ZNs may instantiate either root- or word-based derivation: the former correspond to SENs, the latter to ASNs. We assume that participant-related readings are all root-derived, since they do not represent a typical pattern of the zero suffix, as the description of our database will confirm.

4. Testing previous hypotheses

4.1. Semantic verb classes and ZN readings

Our first question concerns Levin's (1993) and Levin & Rappaport Hovav's (2013) hypothesis that result ZNs point to result verbs and event ZNs to manner verbs. Table 2 is a summary of our verb classes specifying the amount of ZNs for each class and the approximate percentages for the different readings. For each verb class, we marked in bold the values for the readings that appear with more than 50% of the corresponding ZNs, although one should be alert that some verb classes are richer/poorer than others (see last column with total numbers).[7] All verb classes (except for psych) exhibit a majority of event ZNs, but some also present interestingly high values for other readings that we discuss below. We start with a description and examples of each class and assess Levin and Rappaport Hovav's hypothesis at the end. In the interest of space, we list lexemes as examples with further clarification for the less straightforward ones. The OED offers plenty of contexts for the different senses.

---

6   We are not native speakers but judging the classification of these senses is not a matter of native speaker intuition but of linguistic awareness in determining the linguistically relevant class for each sense.

7   We do not aim to draw any statistical conclusions from these numbers at the moment, but the contrasts are clear enough for our discussion of previous hypotheses.

Tab. 2: Overview of ZN readings for result/manner verb classes.

Verb class	ZN reading	(Instance of) Event	(Result) State	Product/ Result entity	Agent/ Cause/ Instru- ment	Total of ZNs
R E S U L T	Change of state	**70%**	30%	**59%**	20%	115
	Psych verbs	**51%**	**66%**	25%	40%	73
	Verbs of cutting	**70%**	4%	**70%**	30%	27
	Verbs of killing	**100%**	10%	50%	20%	10
	Complex verbs	**80%**	13%	44%	26%	285
M A N N E R	Verbs of motion	**95%**	4%	18%	35%	75
	Communication	**88%**	7%	**77%**	18%	56
	Verbs of emission	**74%**	9%	**98%**	30%	87
	Verbs of contact	**100%**	16%	**75%**	44%	32

4.1.1. Result verbs

We considered four semantic verb classes for result verbs: change of state, psych verbs, verbs of cutting, and verbs of killing. We added morphologically complex verbs, as their prefixes and particles are standardly assumed to contribute a result component to the main verb (see McIntyre 2007 for an overview; Harley 2008). Importantly, this group includes manner verbs with particles (which were excluded from the manner verb classes), since we expected them to resemble result verbs more. Result verbs with particles were counted twice: both in their result verb class and as morphologically complex verbs.

  Change of state verbs are the typical result verbs discussed by Levin and Rappaport Hovav. Their richest ZN group denotes events (e.g., *change*, *advance*, *(de)freeze*, *collapse*, *melt*, *fall*), but they also build a large number of result entity ZNs (e.g., *rot* 'rotten material', *broil* 'broiled meat', *roast* 'roasted meat', *split* 'narrow break', *shatter*, *blossom*, *crack*). Some realize a result state reading (e.g., *rot* 'state of being rotten', *collapse*, *meltdown*, *blossom*, *degrade*) and a few refer to instruments or causes (e.g., *drain*, *rot* and *wilt* as diseases, *soak/ scald* 'liquid used for V-ing', *compress* 'machine that V-s'). Iordăchioaia (2020) shows that some subclasses present sharper tendencies. On the one hand, verbs of breaking (*break, crack, rip, split*), bending (*bend, fold, crinkle, stretch*) and cooking (*bake, fry, roast, toast, boil*) display a large number of result ZNs, while their event-like ZNs lack event structure, which typically comes from light verbs (see *to **take a break*** vs. **the break **of the glass***). On the other hand, verbs of calibratable (*rise*,

fall, decrease, drop) and entity-specific (*melt, thaw, decay, rot*) change of state often display event ZNs, which may realize argument structure.

Psych verbs are not discussed in Levin and Rappaport Hovav's work on manner vs. result, but their roots usually express states. For our distinction between manner and result, their root meaning is closer to the latter. We considered all psych verbs, whether causative or non-causative; VerbNet mentions three subclasses called *amuse, admire* and *marvel*.[8] As expected, most psych verbs form stative ZNs (e.g., *disgust, puzzle, dread, delight, concern, torment, trouble*). Event readings are possible when the verbs allow them (e.g., *support, worship, sorrow, insult*); some relate to non-psych readings of the verbs (see *transport* in Table 1 but also *ruffle* 'slipping playing cards rapidly through the fingers', *exhaust* 'expulsion of combustion products from a combustion engine) or are ambiguous between psych and non-psych readings (*torment, stir, refresh*). Result entity readings are abstract and difficult to distinguish from result states (e.g., *grudge, wound, hurt, respect, esteem, support*). Many ZNs acquire such meanings on non-psych readings of the verbs (e.g., *lull* and *mourn* referring to sounds, *impress* as a mark, *insult* 'words produced by insulting', *revolt* 'rebellion', *muddle* 'mistake arisen from confusion', *exhaust* 'products expelled from an internal-combustion engine'). In addition, psych verbs form a substantial number of ZNs that refer to the stimulus/cause of the psych state: e.g., *sorrow, dread, insult, surprise, concern, torment, haunt* as 'things that V the experiencer'.

Verbs of cutting are not numerous, but they are typical result verbs. They mostly derive ZNs with event (e.g., *mow, cut, grind, squash, clip, hack, carve*) and result entity readings (e.g., *slit* and *cut* as incisions, *slice, bore* 'hole made by boring', *chop, chip, shred* as 'pieces resulting from V-ing'). The only ZN close to a result state reading is *squash* on the OED interpretation 'the fact of some soft substance being crushed' or in the expression *to go to squash* 'to become ruined'. A few ZNs denote instruments: e.g., *slice, bore, drill, chop, hack*.

Verbs of killing are only a few, but they all form event ZNs: *kill, murder, massacre, slaughter, rubout, dispatch, shoot, reshoot, overkill*, and *overshoot*. Only *massacre* resembles result states as 'great destruction'. Result entity ZNs are *shoot* 'result of game-shooting', *overshoot* 'result of overshooting',

---

8 Iordăchioaia (2019) argues that even nominals corresponding to causative psych verbs are root-derived, so we do not expect differences in ZN interpretation among the three subclasses, but this may be worth further study.

reshoot 'session of photography', and *dispatch* 'dispatched message', often without involving killing. For agent/instrument readings, *dispatch* may refer to an agency transmitting goods, and *overkill* to the overkilling capacity of nuclear weapons.

A great number of ZNs originate in **complex verbs with prefixes and particles**, most of which are attested over the last 150 years. The examples in (14) illustrate some prefixes and particles that yield larger numbers of ZNs.

(14) a. *re-* (±70 ZNs): rewrite, re-read, re-mark, re-edit, redial, redo, rewind, rewire, retry
   b. *de-* (±10 ZNs): declutter, decoke, defreeze, declaim, detox, dequeue, derequisition
   c. *-out* (18 ZNs): bailout, buildout, close out, drop-out, opt-out, pinch-out, read-out
   d. *-off* (13 ZNs): die-off, ring-off, lay-off, rake-off, rip-off, row-off, sign-off, walk-off
   e. *over-* (±30 ZNs): overbid, overcall, overcross, overdrive, overfill, overkill, overfit
   f. *under-* (7 ZNs): underbid, underbite, undershoot, underspend, understeer, understudy

Some of these already appear in the different result verb classes discussed above, but here we consider them separately. Their most frequent reading is eventive: e.g., *re-run*, *rewrite*, *redial*, *detox*, *makeover*, *trade-up*, *trade-in*, *pat-down*, *take-back*, *transport*, *overspill*, *overtake*. A few have result state readings: *meltdown*, *disconnect*, *die-off*, *distrust*, *comeback* 'return to success', *lay-off* 'spell of relaxation', *interlock* 'condition of being interlocked'. Another rich class is that of result entity ZNs: e.g., *premix*, *admix*, *frame-up*, *miscue*, *takeaway* 'key point to remember', *under-bid*, *download*, *upload*, *bailout*. Among the agent/instrument readings we find *detox* as a center, *rewrite* as a department at a newspaper, *screw-up*, *rip-off* for persons, or *redial*, *undelete* for functions of a phone/computer program.

4.1.2. *Manner verbs*

For manner verbs we considered verbs of motion, verbs of communication, emission, and contact. Almost all **verbs of motion** form event ZNs – their percentages are very high in Table 2 (e.g., *run*, *follow*, *rush*, *trot*, *float*, *race*, *gallop*, *hop*, *sprint*, *jump*). Exceptions are *enter* on the instrument reading of 'enter key' on the keyboard, *Flit* as the name of the insecticide, *skirr* (referring to a sound), and *steer* ('a lead, piece of advice'). Result state readings appear with *coil*, *turn* and *twist*, which all refer to a twisted condition and belong to the *rotate* subclass. Some ZNs have result entity readings such as *step* but most are remote to motion: see *scramble* as 'a mixed dish', *float* (as 'flood'), *twist* 'thread composed of fibres', *wind* 'a curved form', *skitter*, *shuffle*, *scuttle* as specific sounds of the different motions. For the agent/instrument reading we find

a considerable number of ZNs: see *steer*, *enter*, and *Flit* above, *enter* 'entrance', *trudge* 'a trudger', *trot* 'toddling child', *skip* 'one who defaults in payment', *swim* 'part of liquid that floats above the sediment', *creep* 'creeping fellow'.

ZNs derived from **verbs of communication** display a similar picture with respect to event, result state, and agent/instrument readings: the great majority refer to events (e.g., *blubber*, *call*, *twitter*, *wail*, *roar*, *moan*, *stutter*, *declaim*, *gurgle*), only a few to result states (i.e., *twitter* 'state of agitation', *wail* 'state of woe', *roar* 'state of extreme amusement', and *moan* 'state of lamentation'), and a few more refer to causes/instruments (e.g., *scream* 'cause of laughter', *yell* 'very amusing thing', *grouse* 'reason for grumbling', *teach* 'something that teaches'). Unlike ZNs derived from verbs of motion, however, those based on verbs of communication frequently yield result entity readings, which name the sounds or some substance that accompany what is communicated (e.g., *scream*, *blubber*, *yell*, *chatter*, *whimper*, *babble*, *bark*, *gabble*, *gurgle*, *murmur*, *mutter*). In this respect, they are similar to verbs of emission, and many of these verbs cross-classify between the two classes.

ZNs derived from **verbs of emission** are comparable to those formed on verbs of communication, but their result entity group is even richer than the event group. Almost all verbs of emission build result entity ZNs: next to the ones named under verbs of communication, we find those related to light emission (e.g., *shine*, *glitter*, *gleam*, *sparkle*, *flash*), substance emission (*gush*, *spew*, *puff*, *dribble*), and smell emission (*reek*, *stink*). The two ZNs that do not denote result entities are *ooze* and *smell*, which resemble more the agent/cause reading as 'something that Vs' than the result entity. Other ZNs that belong to the agent/instrument/cause group and would qualify as the 'emitter' for these verbs are: *flash*, *shine*, *flicker*, *thunder*, *whistle*, *ring* and *chime* 'sets of bells', *stink* 'a stinkard', *spout* 'object that discharges liquid'. Under event ZNs we find, among others, *bang*, *blast*, *crash*, *crackle*, *cry*, *flash*, *flicker*, *gleam*, *twinkle*, *dribble*, *ooze*, *puff*, and *spew*.

All the **verbs of contact** form event ZNs (e.g., *hit*, *strike*, *caress*, *rub*, *nudge*, *kiss*, *pat*, *touch*, *kick*). Only five ZNs acquire special meanings that resemble result states: *kick* 'feeling of marked enjoyment', *dash* 'discouragement', *rub* 'injury inflicted on the feelings of another', *pinch* 'crisis', and *belt* 'a thrill'. Some ZNs receive result entity interpretations (e.g., *crack*, *thump*, *knock* for sounds, *sting* 'wound', *pinch* 'a bend in the brim of a hat', *graze* 'superficial wound'), and a few are used for agents/instruments: e.g., *nudge* 'reminder', *pinch* 'mean person', *kayo* 'knock-out blow', *kick* 'kicker'.

4.1.3. Root ontology and ZNs

Our research question is whether the formation of event or result entity ZNs correlates with a manner and result verb, respectively, as first hypothesized

by Levin (1993). From our data we can say that change of state verbs and verbs of cutting are well-behaved result verbs in exhibiting a great proportion of result entity ZNs, while verbs of motion are well-behaved manner verbs in showing a high number of event ZNs and very few result entity ZNs. Yet, there is no explanation for the high frequency of event ZNs derived from result verbs (i.e., change of state verbs, verbs of cutting, and verbs of killing) or for the great amount of result entity ZNs with the manner verb classes involving communication, emission, and contact.

Many of the verbs exemplified above are polysemous between different classes, and this is reflected in the interpretations that their ZNs receive. For instance, the result state readings that occur with ZNs derived from manner verbs mostly originate in psych uses of the verbs and not some result state of the event, as is typical for change of state verbs. If we control for all these aspects, we should obtain a cleaner picture. Yet, the unexpected event and result entity ZNs represent such a great majority for the result and manner verb classes under discussion that further research should closely consider finer-grained subclasses of these verbs to see how the expected patterns may be confirmed and how the other readings could be explained. As Iordăchioaia (2020) shows, ZNs derived from some change of state subclasses present a higher proportion of result readings than others (see section 4.1.1.), indicating that Levin and Rappaport Hovav's hypothesis may indeed hold for such subclasses. Moreover, Melloni (2011: sec. 4.3.) groups verbs of emission under non-prototypical creation verbs, in that they yield product readings even for suffixed nominalizations. We could likewise argue that the root ontology of verbs of communication, emission and contact provides information about the product of the verb's action to explain the high number of result ZNs. It is unclear, though, which part of the root ontology this should be: Levin and Rappaport Hovav's manner vs. result ontology may have more general implications, while information about products in emission, communication and contact verbs may be more local.

In conclusion, our data collection does not entirely support Levin's (1993) and Levin & Rappaport Hovav's (2013) hypothesis. First, the high frequency of event ZNs with all non-psych result verb classes shows that an event reading of a ZN is no certain indication of a manner verb. Second, some manner verb classes exhibit a high amount of result entity ZNs, which indicates that a result entity ZN is not a guarantee for a result verb either. Future study should disentangle the different ontological aspects that interact in this process.

4.2. Argument structure in ZNs

The second generalization in the literature that we want to test is whether ZNs indeed fail to realize argument structure and whether the allegedly few

exceptional AS-ZNs block stress shift, as Borer (2013) claims. We focus on ZNs derived from morphologically complex verbs, as they are conclusive regarding both aspects. See Iordăchioaia (2020) for evidence on ZNs based on change of state verbs, which may realize ASN readings as in (6b), by contrast to ZNs derived from psych verbs, which are all argued to instantiate root-derivations as in (6a).

Morphologically complex verbs are interesting for our purposes, since they involve two sub-events, most likely realized by different roots: on the one hand, the verb root introduces a manner (possibly causative) event; on the other hand, the prefix/particle adds a result similar to the result state of result verbs. Following Rappaport Hovav & Levin's (1998) approach to argument realization, each of these sub-events license syntactic arguments, and we expect event ZNs that inherit the verb's event structure to also realize these arguments syntactically.

Our corpus investigation reveals that most of the event ZNs derived from complex verbs appear in contexts where they realize a semantic internal argument.[9] Given that we have not tested these ZNs for event structure via introspection, we cannot guarantee that all of them indeed represent ASNs. However, even in corpora, we find plenty of examples in which the ZN realizing the internal argument is also modified by an event-modifying adjective, which is typically taken to indicate the presence of verbal event structure. In (15) we illustrate such ZNs with prefixes, in (16) with prefixed particles, and in (17) with postposed particles (see also Iordăchioaia to appear).

(15)   a.   *The **ongoing rewrite** of the city's antiquated zoning code* will help [...]. (NOW)
       b.   [I] witnessed *the **constant replay** of this atrocity* unfolding on television. (NOW)
       c.   [S]uch bills are useful for *the **ongoing declutter** of the legislative landscape*. (NOW)
       d.   It has been fitted to enable *the **continuous discharge** of treated sewage*. (NOW)
       e.   [T]he surgery will also stop *the **constant increase** of pain*. (GloWbE)

(16)   a.   A malware attack took place during *a **recent upload** of information* (NOW)
       b.   Businesses [...] shouldn't encourage *the **continual download** of […] apps* (NOW)
       c.   [It] is effectively powerless to stop *a **potential override** of its decision*. (NOW)
       d.   Ejectives […] require *a **quick outrush** of air*. (NOW)
       e.   UK is heading for *a **persistent undershoot** of the 2 % inflation target*. (GloWbE)

---

9   That is, 65% of the event ZNs and 51% of all complex ZNs.

(17) a. *the **ongoing bailout** of the European banking system* (NOW)
      b. *[a] story of **continuous rip-off** of the people* [...] *by the insurance industry* (NOW)
      c. *the **ongoing meltdown** of Greenland and the Arctic* (NOW)
      d. *speaking of **continuing takeover** of the world by a few not so good banks* (GloWbE)
      e. *Syracuse's **recent cutback** of its Posse Leadership Scholarship programs* (NOW)

All three groups of complex ZNs exhibit ASN-readings, but those with postposed particles form a richer class, as they show a greater variety. Prefixes and prefixed particles are not as diverse, but some are very frequent such as *re-* and *over-*. It would be worth investigating the theoretical consequences of these phenomena.

We now come to the question of stress shift. Borer (2013) speculates that its presence should block argument realization, as also predicted by the two patterns of word formation in (6). Our data, however, provides clear evidence against this generalization. All the ZNs illustrated in (15) to (17) exhibit stress shift from a final verbal pattern to an initial nominal pattern with the exception of *declutter*.

This observation poses a serious challenge not only to Borer's claim but also to the DM reasoning promoted in Marantz (2013) on the parallel mapping of the locality domains of morphophonology with those of morphosyntax and semantics in the two word-formation cycles in (6). The mismatch between the phonological changes on the root (i.e., stress shift) and the availability of event structure in ZNs as in (15)–(17) leads us to conclude that one may not want to merge the locality cycles of morphosyntax and semantics with those of morpho-phonology/allomorphy, but rather keep them apart, in full accordance with the separationist position, generally embraced in DM by featuring null affixes (vs. Borer's XSM system).

A possible solution within DM, however, is the pruning rule that Embick (2010: 58–60) employs to account for root allomorphy triggered by Tense inflection, despite intervening *v*P and AspectP: e.g., *sing – sang*. Embick argues that allomorphy is possible because the intervening nodes are null: when an overt verbalizer is present, such as *-ize*, root allomorphy is excluded and regular inflection appears instead: e.g., *real-ize – realized*. This predicts that ZNs that include overt verbalizers should not undergo stress shift. Borer showed that ZNs cannot be formed from overtly verbalized bases (see (7)). However, some ZNs with overt *-en* and postposed particles seem to be possible, as in (18), and our consultants confirm that they bear the same stress pattern as their base verbs, validating Embick's proposal (see Iordăchioaia to appear).

(18)   New towels were provided every day, as well as *a straighten up of the bed*.[10]

Even if this solution can solve this puzzle, the distinction between the two word-formation patterns in (6) also predicts that we may find cases where derived nominals block allomorphy as ASNs, but allow it as RNs/SENs, a mismatch we are unaware of and find counterintuitive, since these readings are usually associated with the same morphophonology.

5. Conclusions

In this paper we have empirically investigated two aspects in the behavior of ZNs and their implications for theories of nominalization and word formation, namely, 1) how their interpretations relate to the base verb class and the manner-result ontology; and 2) to what extent they may realize argument structure and also conform to the theoretical expectation that argument realization should block stress shift.

First, the manner-result dichotomy among verb classes is not perfectly mapped onto the interpretation of the corresponding ZNs, and further study is needed in order to fine-grain the various interfering factors. Second, we have closely investigated complex ZNs and have shown that many display ASN uses in natural text corpora. Most of these also involve stress shift, casting doubts on the isomorphic mapping between morphophonology and morphosyntax/semantics in word formation, even though solutions may be available, especially in DM.

To conclude, we expect a model like DM to be able to account for this diversity of ZNs. If zero is a possible spell-out of the nominalizer *n* in (6), similarly to *-ing* and ATK-suffixes, we can implement all these properties (see Alexiadou & Grimshaw 2008). However, we do not see how Borer's (2013) model, in which ZNs are root categorizations in context in the absence of any suffix, could account for the similarity between ZNs and SNs in building ASNs, unless she posits a zero suffix, as suggested in a footnote (Borer 2013: 331).

Acknowledgements

---

10 Taken from the web (https://www.tripadvisor.co.uk/ShowUserReviews-g186338-d285524-r724451834-QueensHotel-LondonEngland.html) and found acceptable by our consultants.

References

Alexiadou, Artemis. 2001. *Functional structure in nominals: Nominalization and ergativity*. Amsterdam & Philadelphia: Benjamins.

Alexiadou, Artemis & Jane Grimshaw. 2008. Verbs, nouns and affixation. In Florian Schäfer (ed.), *Working papers of the SFB 732: 01*, 1–16. University of Stuttgart: OPUS.

Balteiro, Isabel. 2007. *The directionality of conversion in English. A dy-synchronic study*. Bern: Lang.

Beavers, John & Andrew Koontz-Garboden. 2020. *The roots of verbal meaning*. Oxford: Oxford University Press.

Borer, Hagit. 2013. *Taking form. Structuring sense*. Volume III. Oxford: Oxford University Press.

Bram, Barli. 2011. *Major total conversion in English*. Wellington, New Zealand: Victoria University of Wellington dissertation.

Cetnarowska, Bożena. 1993. *The syntax, semantics and derivation of bare nominalizations in English*. Catowice: Uniwersytet Slaşki.

Chomsky, Noam. 1970. Remarks on nominalization. In Roderick Jacobs & Peter Rosenbaum (eds.), *Readings in English Transformational Grammar*, 184–221. Waltham, MA: Ginn.

Clark Eve V. & Herbert H. Clark. 1979. When nouns surface as verbs. *Language* 55(4). 767–811.

Darby, Jeannique. 2015. *The processing of conversion in English: Morphological complexity and underspecification*. Oxford, UK: University of Oxford dissertation.

Davies, Mark. 2016. *Corpus of News on the Web (NOW)*: 10 billion words from 20 countries, updated every day. https://www.english-corpora.org/now/

Davies, Mark. 2013. *Corpus of Global Web-Based English: 1.9 billion words from speakers in 20 countries (GloWbE)*. https://www.english-corpora.org/glowbe/

Davies, Mark. 2008. *The Corpus of Contemporary American English (COCA): One billion million words*, 1990–2019. https://www.english-corpora.org/coca/

Embick, David. 2010. *Localism versus globalism in morphology and phonology*. Cambridge, MA: MIT Press.

Fábregas, Antonio. 2014. Argument structure and morphologically underived nouns in Spanish and English. *Lingua* 141: 97–120.

Grimshaw, Jane. 1990. *Argument structure*. Cambridge, MA: MIT Press.

Harley, Heidi. 2009. The morphology of nominalizations and the syntax of vP. In Anastasia Giannakidou & Monika Rathert (eds.), *Quantification, definiteness, and nominalization*, 321–343. Oxford: Oxford University Press.

Harley, Heidi. 2008. The bipartite structure of verbs cross-linguistically. In Thaïs Cristófaro Silva & Heliana Ribeiro de Mello (eds.), *Conferencias do V Congresso Internacional da Associacao Brasileira de Linguistica*, 45–84. Belo Horizonte, Brazil: ABRALIN and FALE/UFMG.

Harley, Heidi & Rolf Noyer. 2000. Formal versus encyclopedic properties of vocabulary: Evidence from nominalizations. In Bert Peters (ed.), *The lexicon-encyclopedia interface*. Amsterdam: Elsevier Press.

Hurrell, Esther. 2001. *The morphology and phonology of English noun-verb stress doublets: Base-driven lexical stratification, prefixes and nominalisation*. Edinburgh: University of Edinburgh dissertation.

Iordăchioaia, Gianina. To appear. Event structure and argument realization in English zero-derived nominals with particles. In Andreas Trotzke & George Walkden (eds.), CGSW 34. Proceedings of the 34th Comparative Germanic Syntax Workshop, special issue of Nordlyd 44.1.

Iordăchioaia, Gianina. 2020. Categorization and nominalization in zero nominals. Artemis Alexiadou & Hagit Borer (eds.), *Nominalization: 50 Years on from Chomsky's* Remarks. Oxford: Oxford University Press.

Iordăchioaia, Gianina. 2019. The root derivation of psych nominals: Implications for competing overt and zero nominalizers. *Bucharest Working Papers in Linguistics* 21(2). 57–79.

Iordăchioaia, Gianina & Martina Werner. 2019. Categorial shift via aspect and gender change in deverbal nouns. *Language Sciences* 73. 62–76.

Irmer, Roland. 1972. *Die mit Nullmorphem abgeleiteten deverbalen Substantive des heutigen Englisch*. Tübingen: University of Tübingen dissertation.

Kiparsky, Paul. 1982. From cyclic phonology to lexical phonology. In Harry van der Hulst & Norval Smith (eds.), *The structure of phonological representations*, 131–175. Dordrecht: Foris.

Kipper Schuler, Karin. 2005. *VerbNet: A Broad-coverage, Comprehensive Verb Lexicon*. University of Pennsylvania dissertation.

Kisselew, Max, Laura Rimell, Alexis Palmer & Sebastian Padó. 2016. Predicting the direction of derivation in English conversion. In *Proceedings of the ACL SIG-MORPHON workshop*, 93–98. Berlin.

Levin, Beth. 1993. *English verb classes and alternations*. Chicago: University of Chicago Press.

Levin, Beth & Malka Rappaport Hovav. 2013. Lexicalized meaning and manner/result complementarity. In Boban Arsenijević, Berit Gehrke & Rafael Marín (eds.), *Studies in the composition and decomposition of event predicates*, 49–70. Dordrecht: Springer.

Lieber, Rochelle. 2016. *English nouns. The ecology of nominalization*. Cambridge: Cambridge University Press.

Marantz, Alec. 1997. No escape from syntax: Don't try morphological analysis in the privacy of your own lexicon. *UPenn Working Papers in Linguistics* 4(2). 201–225.

Marantz, Alec. 2013. Locality domains for contextual allomorphy across the interfaces. In Ora Matushansky & Alec Marantz (eds.), *Distributed Morphology today: Morphemes for Morris Halle*, 95–116. Cambridge, MA: MIT Press.

Marchand, Hans. 1969. *The categories and types of present-day English word formation*. Munich: Beck.

Marchand, Hans. 1963. On a question of contrary analysis. *English Studies* 44(1). 176–187.

McIntyre, Andrew. 2007. Particle verbs and argument structure. *Language and Linguistics Compass* 1(4). 350–397.

Melloni, Chiara. 2011. *Event and result nominals. A morpho-semantic approach*. Bern: Lang.

Newmeyer, Frederick J. 2009. Current challenges to the lexicalist hypothesis. An overview and a critique. In William D. Lewis, Simin Karimi, Scott O. Farrar & Heidi Harley (eds.), *Time and again*, 91–117. Amsterdam: Benjamins.

Plag, Ingo. 2003. *Word-formation in English*. Cambridge: Cambridge University Press.

Rappaport Hovav, Malka & Beth Levin. 1998. Building verb meanings. In M. Butt & W. Geuder (eds.), *The projection of arguments: Lexical and compositional factors*, 97–134. Stanford: CSLI Publications.

Rimell, Laura D. 2012. *Nominal roots as event predicates in English denominal conversion verbs*. New York, NY: University of New York dissertation.

Roy, Isabelle & Elena Soare. 2013. Event-related nominalizations. In Gianina Iordăchioaia, Isabelle Roy & Kaori Takamine (eds.), *Categorization and category change*, 123–152. Newcastle upon Tyne: Cambridge Scholars Publishing.

Wechsler, Stephen. 2015. *Word meaning and syntax: Approaches to the interface*. Oxford: Oxford University Press.

Wechsler, Stephen. 2008. A diachronic account of English deverbal nominals. In Charles B. Chang & Hannah J. Haynie (eds.), *Proceedings of the 26th West Coast Conference on Formal Linguistics*, 498–506. Somerville: Cascadilla Proceedings Project.

Gianina Iordăchioaia
Universität Stuttgart
Institut für Linguistik: Anglistik
Keplerstraße 17
70174 Stuttgart
gianina@ifla.uni-stuttgart.de

Susanne Schweitzer
New York University
Graduate School of Arts and Science
70 Washington Sq S
10012 New York City
susanneschweitzer@gmx.net

Yaryna Svyryda
Universität Stuttgart
Institut für Linguistik: Anglistik
Keplerstraße 17
70174 Stuttgart
yaryna.svyryda@gmail.com

María Camila Buitrago Cabrera
Universität Stuttgart
Institut für Maschinelle Sprachverarbeitung
Pfaffenwaldring 5b
70569 Stuttgart
buitrama@ims.uni-stuttgart.de