English deverbal compounds with and without arguments
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This paper is concerned with *deverbal compounds* (DCs, a.k.a. *synthetic compounds*), i.e., noun-noun compounds that are headed by deverbal nouns (e.g., *snow removal*, *watchmaker*) and whose non-heads are typically interpreted as the internal argument of the head noun's base verb (cf. *to remove snow*, *to make watches*). This argumental relation makes DCs similar to *argument structure nominals* (ASNs; see Grimshaw's 1990 complex event nominals; e.g., *removal of snow*, *maker of watches*) and differentiates them from *primary* (or root) *compounds* (PCs, e.g. *fireman*, *tomato bowl*), which are also formed of two nouns but are interpreted on the basis of world knowledge or context (not some argumental relation): cf. *man who fights fire*, *bowl of/for tomatoes*. On the basis of corpus data in combination with introspection and theoretical insights from Distributed Morphology (DM), I will argue against the approach in Borer (2013), according to which DCs do not realize internal arguments and share no structure with ASNs, but are freely interpreted PCs. My proposal is that DCs are essentially argumental, yet due to the ambiguity of their head nouns between ASNs and result nominals (RNs, which are lexicalized deverbal nouns and realize no arguments; see Grimshaw 1990), they may also acquire PC readings, when headed by RNs.

Previous approaches. Two main proposals have been made in the literature on DCs: see (1).

(1) a. [[**snow**$_N$ + **remove**$_V$]$_V$ + -al]$_N$ (SC approach)
    b. [snow$_N$ + [**remove**$_V$ + **-al**]$_N$]$_N$ (PC approach)

On the one hand, what I call the synthetic compound (SC) approaches in (1a) implement the argumental relation between the non-head and the base verb, by putting them first together in a N+V compound verb, from which the DC is then derived. These approaches recognize DCs as different from PCs, given the direct connection between the non-head and the base verb (e.g., Roeper & Siegel 1978, Ackema & Neeleman 2004, Harley 2009, McIntyre 2016). On the other hand, the PC approaches argue that DCs are a sub-type of PCs with the difference that the non-head is interpreted as an argument of the head noun or via some underspecified relation, which may be argumental (e.g., Selkirk 1982, Lieber 2004, Olsen 2017). The drawback of SC approaches is that they predict a N+V compound verb (e.g., **to snow remove*, **to watchmake*), which are not productive in English (cf. exceptions such as *to babysit*). PC approaches wrongly predict the two nouns to exist independently of the DC, which is not the case for some head nouns: e.g., ??*maker*, ??*keeper* (cf. *watchmaker*, *housekeeper*). The different solutions available are far from satisfactory, which is why in time some researchers have changed their analyses in both directions (cf. from SC to PC approach in Lieber 1983, 2004 and from PC to SC approach in Booij 1988, 2010).

Borer (2013) offers a syntactic approach in which she argues against the argumental status of non-heads in DCs, as in PC approaches; yet, in her exo-skeletal system, she derives DCs from two morphological roots (the non-head and the base verb of the head noun), which form a compound root that is later nominalized by the suffix, much like in the SC approaches in (1a). (2) represents her analysis.

(2)   [[√**snow** + √**remove**] + -al]$_N$ (Borer 2013)

Borer bases her argumentation on some differences between DCs and ASNs, which she takes to show that DCs are not headed by ASNs (contra Grimshaw 1990), but by RNs. That is, DCs are idiosyncratic word formations, which can be accounted for by deriving them out of two roots, in contrast to ASNs, which are compositional and involve functional projections on top of the root. I will present and reject Borer's arguments, showing that a more refined analysis of the different types of DCs is necessary.

First, Borer (2013) argues that DCs cannot be ASNs, because they lack two essential properties that attest the presence of event (and argument) structure in ASNs: DCs allegedly disallow *in/for*-adverbials and *by*-phrases, as illustrated in (3). Second, she presents apparent cases of DCs that receive an external argument-like reading of the non-head as in (4) to support the idea that DCs cannot host argument structure. If DCs involved ASN heads, they should realize internal arguments (IAs) (before any external arguments (EAs)), since IAs are lowest on the thematic hierarchy (see (5) from Grimshaw (1990)).

(3) a. the *demolition of the house* by the army in two hours   (ASN)

    b. the *house demolition* (*by the army) (*in two hours)   (DC)

(4)   *teacher* recommendation, *government* decision, *court* investigation

(5) a. *book*-reading by students   vs.   ***student**-reading of books   (< Students read *books*.)

    b. *gift*-giving to children   vs.   ***child**-giving of gifts   (< to give *gifts* to children)

Although many of Borer's observations are correct, I will show that her analysis suffers from the flaws of both analyses in (1): it predicts N+V compound verbs like **to snow remove* and fails to capture the regularity of DCs with IAs, by overgeneralizing an ambiguous interpretation for all DCs.

Present proposal. My proposal is that DCs are ambiguous just like their deverbal noun heads: some DCs are unambiguously headed by ASNs and trigger an IA reading of their non-heads as in SC approaches (e.g., *snow removal*; (5)); others are headed by unambiguous RNs and behave like PCs as in PC approaches, since their heads have no event structure (e.g., *apartment building*, which doesn't refer to 'building apartments' but to a 'building *with* apartments'). Among the latter, we also find those that allow an EA-like reading, such as *teacher recommendation*. The trickiest case is that of DCs whose heads are ambiguous between ASNs and RNs (e.g., *student evaluation = evaluation by/of students*).

Relying on a database of almost 3,000 DCs manually annotated by three native speakers, I will argue that DCs that host IAs as non-heads (IA-DCs) are derived as in (1a), while those with a purported external argument reading are PCs as in (1b). IA-DCs will be shown to associate with process (vs. result) readings of their heads and other morphosyntactic properties, following Grimshaw (1990), such as the realization of argument structure by the noun heads when appearing outside DCs. I will further show that purported EA-DCs do not host EA non-heads, since they fail to exhibit the morphosyntactic properties specific of a VoiceP, which introduces EAs (cf. *an (*intentional) teacher recommendation*; see Alexiadou et al. 2016).

For the data in (3), I will argue that *in/for*-adverbials modify AspectP, which is not obligatory for an event structure that hosts IAs (the vP is enough; see Alexiadou et al. 2010, contra Borer's system). Furthermore, *by*-phrases are widely attested with DCs in corpora (see also (5a) from Grimshaw 1990, contra Borer 2013) and are introduced by VoiceP. For IA-DCs, VoiceP is possible, since they have event structure with IAs (see (5); e.g., *intentional book reading*). The fact that IA-DCs indeed realize IAs, while EA-DCs are simple PCs is also emphasized by the type of non-heads they allow. As Abrosimova (2017) shows, IAs in DCs are very diverse semantically, just like with verbs, while EA-like non-heads mostly involve administrative institutions (cf. *government*, *court* in (4)). In addition, Bobaljik (2005) argues that even DCs like *city employee* are PCs whose non-head acts as a modifier 'under the auspices of' and not as an EA (contra Lieber 2004). These non-heads cannot appear with a *by*-phrase (**employee by the city*) and cannot refer to a human (e.g., *The boss employed her > *boss employee*).

My analysis of IA-DCs is a DM-based variant of the SC-approach (see (1a)), while that of EA-DCs is as in the PC approaches in (1b). To account for the lack of the N+V compound verbs predicted by Borer's (2013) and also Harley's (2009) analyses, I will show that the non-head in IA-DCs is not a root, but an nP, which does not incorporate into the verb (or its root). In the absence of a DP, the nP cannot receive case and must raise to Spec nP, as argued by Iordachioaia et al. (2017) in contrast to Greek DCs, which involve incorporation of the non-head's root into the verb and also build N+V compounds (see *krasopotis* 'wine drinker' **-** *krasopoti* 'wine drinking' - *krasopino* 'to wine drink'). In English, only some idiomatic DCs have N+V compounds (e.g., *facelifter - to facelift*, *babysitter - to babysit*) and these are analyzed as in Borer's (2). This correctly predicts their compound verbs and the fact that their non-heads (*face* and *baby*) are not IAs, since the verbs may realize an IA (cf. *to facelift <u>a BMW</u>*, *to babysit <u>a two-year old</u>*).

Recent references: <u>Abrosimova, A. 2017</u>. *'Object' and 'subject' readings in English deverbal compounds*. MA Thesis. U. Stuttgart; <u>Alexiadou, A., E. Anagnostopoulou, F. Schäfer. 2016</u>. *External arguments in transitivity alternations*. OUP; <u>Alexiadou, A., G. Iordachioaia, E. Soare. 2010</u>. Number/Aspect interactions in the syntax of nominalizations. *Journal of Linguistics* 46.3. <u>Borer, H. 2013</u>. *Taking Form*. OUP; <u>Iordachioaia, G, A. Alexiadou, A. Pairamidis. 2017</u>. Morphosyntactic sources for nominal synthetic compounds in English and Greek. *Zeitschrift für Wortbildung* 1.1: 47-72. <u>McIntyre, A. 2016</u>. The grammar of synthetic compounds in English. Talk given at SLE 49, Naples. <u>Olsen, S. 2017</u>. Synthetic compounds from a lexicalist perspective. *Zeitschrift für Wortbildung* 1.1: 17-46.