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V. Rules and restrictions in word-formation II: Special cases

49. Argument-structural restrictions on word-formation patterns

Abstract

The implementation of argument-structural effects on word-formation is a vital aspect in modeling the lexical system and the interface between morphology and syntax. The current article provides an overview of theoretical perspectives in the field and presents analyses of structural principles holding in the domain. A number of test cases relating to fundamental operations, e.g., in compounding and nominalization are discussed, as well as specific conditions restricting the formation of morphologically complex words.

1. Introduction

The relation between argument structure (AS) and word-formation patterns is a central topic in the theoretical description of the structural operations available in language. In particular, a correspondence between full sentences and certain types of nominalizations (cf. *John described the city* and *John's description of the city*), where each of the predicates' arguments link systematically to specific structural positions, has long been assumed in the literature (e.g., Lees 1960; Levi 1978; Marchand 1969). For example, Marchand's (1969) classification of compound nouns is based upon the syntactic function of the compound's head constituent, so that *beer drinker* classifies as subject-type nominalization and *eating apple* as object-type. The parallels between nominalizations and sentences are also evident when aspectual properties of a verbal predicate are inherited by a nominal (cf. *giving* vs. *gift*), which, at the same time, have been argued to determine the argument realization qualities of the head noun, cf. *The frequent expression* *(*of one's feelings*) *is desirable*, in which the event reading of *expression* forces the object argument to be realized overtly, cf. Grimshaw (1990: 50).

The examples illustrate that a deeper understanding of AS regularities in processes of word-formation can also give us a broader insight into the characteristics of the interfaces between the different structure-building components of grammar. Specifically, an investigation can help us find an answer to the intensely debated assumption of an autonomous

morphological, word-formation component, which is attached to the lexical system and as such isolated from syntax. The various perspectives on this matter, as will be shown in the next section, can differ radically in their assumptions about the general architecture of grammar and the locus of word-formation, as well as in their theoretical presuppositions (for outlines see, among others, Carstairs-McCarthy 2010; Meyer 1993; Olsen 1989). This is also reflected in the terminological conventions used in the literature, e.g., when the labels of "external argument" from a syntactic angle and "agentive role" from a lexical-semantic perspective are used to denote the same thing, i.e. a "subject" nominal of some kind. Hence, discussing word-formation regularities in a theory-neutral fashion is rather difficult.

2. Word-formation and the syntax-morphology interface

According to the classical lexicalist-morphological stance, word-formation is part of an autonomous component of grammar, i.e. the lexical system, which organizes the formation of novel lexemes and can, as such, be seen as the basis of lexical productivity. The history of the debate about the appropriateness of this perspective leads us back to Chomsky's seminal "Remarks on Nominalization" (Chomsky 1970), in which he localizes nominalizations and word-formation in general as part of the lexicon and thus deprives the lexicon of regular syntactic structure building mechanisms, see article 45 on rules, patterns and schemata in word-formation, Bauer (1983: 75 ff.), Roeper (2005). Initially, word-formation was considered for the most part idiosyncratic, and it was only later that such a lexicalist approach to word-formation was bolstered with systemic lexical and AS rules in their own right as have been developed, for example, by Di Sciullo and Williams (1987), Jackendoff (1975), Lieber (2004), Williams (1981a). Marchand (1969) can be considered a precursor of lexicalism, cf. Kastovsky (2005).

To consolidate the assumption that morphological rules are different from syntactic transformations (cf. Scalise and Guevara 2005: 150), often the principle of lexical integrity is employed (cf. Anderson 1992). The principle states that syntactic operations cannot access word-internal structures and thus explains, for instance, the ungrammaticality of "stranded" noun-noun compounds as in *Morphology, she would never give a ____ lecture (see Spencer 2005: 78). However, apparent counter-examples as they are related, e.g., to the bracketing paradox (evident in phrases like transformational grammarian, where the adjective forms a constituent with a subpart of the head noun, i.e. grammar, cf. Booij 2009a for discussion) can be utilized to promote the exact opposite, non-lexicalist position, in which the internal structure of complex words is indeed open to syntactic operations. According to such an integrative view, products of word-formation are generated by the same recursive mechanisms as syntactic phrases, with the implication that syntactic operations like movement or binding apply at word level as well. In this manner, for example, Lieber investigates cases of sublexical binding as in Max's argument was point$_i$less, but Pete's did have one$_i$, which displays pronominal binding below the level of X^0 through reference between one and the sublexical noun point in pointless (cf. Lieber 1992: 130).

The origins of the syntactic approach can be traced back to transformationalist accounts of nominalization as we find them in Lakoff (1970). Several theoretical variants

of the integrative view of word-formation have been implemented in quite different grammar models since then, among them distributed morphology (cf. Harley 2008; Lieber 2006) and also construction grammar (cf. Booij 2009a, 2009b; Schlücker and Plag 2011, Borer 2003 and article 12 on construction grammar). A position mediating between the syntactic and the lexicalist stance is taken by Borer (1991), who promotes a parallel architecture. Here, internal word-structure is subject to a separate morphological rule system whose output, however, is visible to syntax in the derivation of the structural environment as well as the subcategorization features of complex words.

3. Structural principles

In order to capture the argument-structural characteristics of complex expressions in a principled manner, proponents of the different theories sketched above have formulated a number of rules relating to issues like the following: How is the AS of a verbal stem transferred to a derived form? What linking regularities underlie the linear and thematic organization of an output form? And what types of modifiers can a complex noun host? Certain answers to these questions might entail, for instance, that a phrasal modifier cannot occur within a synthetic compound: *apple on a stick taster*, cf. Roeper (1988). Lieber (1992: 59 f.) explains this behavior on syntactic grounds when she argues that a phrase, i.e. a maximal projection like *apple on a stick*, is case-licensed in the complement position to the right of the head only and, therefore, cannot be moved leftward.

3.1. Principles of argument projection

A central research question in the word-formation domain under discussion concerns the process by which AS features are projected up from lexical entries to produce complex word structures and, thus, grasp the intuition that the AS of a compound verb like *pan-fry* is a function of the AS of its head. Lieber (1983) conceives of this in terms of a feature percolation mechanism, which transfers the morpho-syntactic features (including the AS features) to the first non-branching node dominating that morpheme, see (ibid.: 252) and, for critical discussion, Lieber (1992: 86 ff.). Specific AS realizations are then derived from her argument linking principle see Lieber (1983: 258). It dictates that if a verbal head appears as sister to a (potential) internal argument that is the logical object, this argument slot will be linked (i.e. satisfied), thus bringing about the configuration of synthetic compounds like *beer drinker* as [[beer$_N$ drink$_V$] -er$_N$]. In the case of a semantic argument of the head, e.g, the instrument *hand* in *hand-weave*, the verb's AS features percolate to the compound verb, which then satisfies its internal role outside the compound, as in *hand-weave the cloth* (cf. Spencer 1991: 331 f. for critical discussion). One problem with this analysis is that in the derivation of deverbal synthetic compounds like *beer drinker* a verbal element would be involved, which, however, is not a possible expression: *John likes to beer-drink*, cf. Carstairs-McCarthy (2010: 26 ff.) for discussion. Hence, in Lieber (2004), the theoretical focus shifts to lexical-conceptual aspects of synthetic compounding when the author formulates her principle of co-indexation. This maintains that the head's highest argument, in our case the referential argument of

-*er*, and the non-head's (*drink*-) highest argument, are co-indexed, which renders an agentive interpretation of *drinker* with the internal argument role still active (for the details see article 45 on rules, patterns and schemata in word-formation, Lieber 2004: 83, 2005: 382 f.).

3.2. Thematic regularities

A significant number of scholars take into account thematic criteria in their description of the AS regularities in word-formation. For example, Baker (1998: 190) refers to Chomsky's (1981) theta criterion to rule out cases like **a truck-driver of 14-wheelers*, where the PATIENT role of *drive* is realized twice, which violates the criterion and, at the same time, illustrates that it governs not only phrasal syntax but the construction of compound structures as well. Also, again from a syntactic perspective, Lieber (1992: 61) exploits Baker's (1988) uniformity of theta assignment hypothesis to motivate the deepstructural identity of phrases and compounds of the type *quencher of thirst* and *thirst quencher*, respectively.

Grimshaw (1990: 14) refers to the specific semantic content of thematic roles when she formulates her prominence theory. According to this approach, for example, a GOAL argument is more prominent than a THEME argument and a non-head of a compound must realize the least prominent argument. This is illustrated by the ungrammaticality of **child-giving of gifts* in which *child* denotes a GOAL. Consequently, *gift-giving to children*, which has the THEME argument inside the compound, is grammatical. Note, however, that Selkirk (1982: 37) considers an equivalent example like **toy-giving to children* unacceptable (see Härtl 2001: 82 f. for further discussion). Another aspect Grimshaw examines in this context is the syntactic type of a noun's argument: Sentential complements of a deverbal nominal are always optional, cf. *The announcement* (*that an investigation has been initiated*) *was inaccurate*, even if the underlying verb takes an obligatory complement, i.e. an object NP, cf. **They announced* (see Grimshaw 1990: 74). The author concludes that nouns do not directly theta-mark sentential complements; an assumption which is also supported by the unavailability of sentential complements to -*er* nominals, cf. **the observer that water boils at a certain pressure* (see Grimshaw 1990: 101 ff.).

As a final matter, the theta-assigning behavior of affixes shall be mentioned here. Lieber (1992: 57) assumes that affixes like *de-* and *en-* as in *defuzz* and *encase* assign a theme and a location role, respectively, to their base nouns. In contrast, a suffix like -*ize* does not assign a role to its base but rather assigns a theme role to a word-external NP, cf. *modernize the monarchy*, and Lieber concludes that only verbalizing prefixes can assign theta-roles word-internally. Later, Lieber (1998) revises this position in reference to examples like *apologize* or *texturize*, in which the nominal base seems indeed to be assigned a theme role, which leads the author to favor a lexical-semantic analysis over a purely syntactic approach.

3.3. Linearization regularities

The question of whether and how affixes assign thematic roles hinges on whether an affix figures as head or not. Williams (1981b: 248) formulated a righthand head rule for

English, which defines the right-hand member of a complex word as the head of that word. Hence, for example, the suffix *-ion* in *construction* functions as the head. The rigidity of this (parameterized) rule is called into question by apparently left-headed complex verbs containing prefixes like *en-*, which seem to determine the syntactic category of an output form, cf. *entomb*, [[en-$_V$ tomb$_N$]$_V$]; see Lieber (1992: 31), Selkirk (1982), Williams (1981a: 249 f.) and, for discussion article 23 on particle-verb formation. Addressing this problem, Olsen (1992: 12), following Wunderlich (1987), argues for German prefixed forms like [[Ge-$_N$ spött$_V$]$_N$] ('mockery') or [[ver-$_V$ arm$_A$]-en$_V$] ('to impoverish') that they do not contradict the righthand head rule. On diachronic grounds, Olsen characterizes cases like these as instances of a conversion, which triggers a categorical change of the head, with the assumption that it is the right-hand element, i.e. *spott-* and *arm*, respectively, which functions as the head of the complex word. To guarantee a match between morpho-syntactic and morpho-phonological configurations applying to affixes and heads, Ackema and Neeleman (2004: 140) assume a linear correspondence principle, which controls the linear organization of complex words, cf. also Spencer (2005: 91).

From a transformational standpoint, Roeper and Siegel (1978) assume a first sister principle, which states that verbal compounds always incorporate the first sister of the underlying verb, thus excluding ungrammatical forms like **quickly-smoker*, in which *quickly* does not figure as first sister, cf. *John smokes cigarettes quickly.* Bauer (1983: 180 f.) argues that the first sister principle is empirically incorrect because it does not predict examples of verbal compounds like *evening smoker*, in which an adverbial occurs as non-head. Bauer's more general proposal implies that any noun can be used in the formation of synthetic compounds containing a transitive verb (for discussion see also Lieber 1983: 282 f.; Spencer 1991: 326 f.). A refined ordering principle, which is related to the first sister principle, was formulated by Selkirk (1982: 37). Her first order projection condition states that all internal arguments need to be realized "within the first order projection of X$_i$", thus excluding cases like **pizza restaurant eating*, where the internal argument *pizza* of the verb *eat* is realized outside the first projection of the compound's head, cf. Olsen (2000: 907 f.), Spencer (1991: 328 f.).

4. Conditions and operations

Word-formation operations that are associated with the AS of lexical elements are restricted by mechanisms of quite different provenance. AS can be affected in many ways when a complex word is produced and, thus, we find operations in which AS features are simply passed on to some output form (*describe sth.* → *the description of sth.*), but also operations of AS reduction (*tell sb. sth.* → *retell sth.*) and AS extension (*grow* → *outgrow sth.*), cf. Bauer (1983: 177 ff.). Williams (1981a) was the first to formalize AS operations in terms of an externalization and internalization of arguments. He assumes, for example, the rule in (1) for suffixation with *-able*, which implies two stages: (i) the promotion of a new external argument (cf. Williams 1981a, Spencer 1991: 192 f.):

(1)   *read* (AGENT, THEME) → *readable* (AGENT, THEME)

Rules like this enable us to capture meaning relations between sentences like *John read the book* and *The book is readable* in structural terms. Structural configurations are central as well for the interpretation of complex expressions. For example, the compound noun *soldier brother* is interpreted as denoting a brother of a soldier due to the fact that the relational noun *brother* contains an argument slot to be obligatorily filled, cf. *The brother* ??*(of Max) smokes*. In contrast, the interpretation of *computer brother*, because of the inanimate non-head noun, can only be deduced by referring to conceptual knowledge and, thus, be possibly understood as the brother who is a computer expert (cf. Meyer 1993: 104 ff., Štekauer 2005: 28 ff.). Along with the mere presence of an argument slot, it is also the thematic content of the slot, which governs the interpretation of complex words. From a processing perspective, Gagné and Shoben (1997) have developed a thematic relation model based on the assumption that thematic information associated with a noun is a key factor in the interpretation of noun-noun compounds. For instance, the noun *mountain* in *mountain cabin*, has a locative role as its primary thematic function (as part of its qualia structure, see Pustejovsky 1995) and, thus, tends to be interpreted as a cabin on a mountain.

Word-formation operations are also sensitive to the number of arguments. This is evident in compounding where a restriction holds that no compound can be formed from a verb that has two obligatory arguments, cf. the example **the book-putting on the table*, which can be explained under reference to Selkirk's (1982) first order projection condition, see section 3.3 and Baker (1998: 191 ff.) for details. Further, Di Sciullo (2005) formulates a restriction which holds that as soon as an argument position is satisfied within a compound it is no longer accessible to any compound-external NP as **bike-ride a scooter* illustrates (cf. Di Sciullo 2005: 27). In this context, cases of apparent double argument saturations are challenging as in *Personenbeschreibung der Täter* 'person description of the culprits', where the predicate's THEME role is associated with two nominals expressions, i.e. *Person* and *Täter*, and where the distinction between a synthetic and root compound is blurred, cf. Solstad (2010).

Moreover, Randall (2010) observes that the grammatical difference between argument and adjunct affects compound formation. In passive compounds, for example, the left-hand element must be an adjunct, cf. *hand-sewn clothes* vs. **away-given clothes*, and the externalized argument must be internal to the verb, *machine-washed fabrics* vs. **hoarse-shouted throat* (cf. Randall 2010: 210). Further, only (resultative) arguments but not adjuncts can occur as right-hand member in a passive compound: *watered-flat tulips* vs. **picked-late grapes* (ibid.: 148 f.). Note, however, that Randall's restriction is possibly subject to parameterization, as the availability of corresponding German examples indicates: *der heisergeschrieene Hals* 'the hoarse-shouted throat', *die weggegebene Kleidung* 'the away-given clothes'.

4.1. Prefixation and suffixation

The connection between AS and the various operations of prefixation and particle verb formation are well described in the literature, cf., among others, Booij (1992), Dehé et al. (2002), Günther (1987), McIntyre (2003), Olsen (1997a, 1998), Stiebels (1996), Wunderlich (1987) as well as articles 23 and 35 on particle-verb formation and particle

verbs in Germanic. For example, in Germanic languages like German and Dutch, the prefix *be-* attached to an intransitive verb like *gehen* 'to walk' introduces an internal argument, cf. *Sie begehen die Insel* 'they walk the island', which Booij (1992) considers the outcome of a rule applying at the level of lexical-conceptual structure. A similar modification is the locative alternation, which is morphologically marked in German and Dutch but not in English, cf. Rappaport and Levin (1988), Olsen (1994) for an analysis:

(2)   a.   Er pflanzte Blumen auf das Beet.
       b.   Er bepflanzte das Beet mit Blumen.

(3)   a.   He planted flowers in the bed.
       b.   He planted the bed with flowers.

Likewise, the prefixes *ver-* and *über-* in German affect AS in that the output form is always a transitive verb while the input's AS can be intransitive, cf. *schreiten* 'step' → *etwas überschreiten* 'to step over sth.; lit. to over-step sth.'. In contrast, particles like *ab-* or *aus-* do not introduce a new argument slot, cf. *fahren* 'to drive' → *abfahren* 'to depart', *schlafen* 'to sleep' → *ausschlafen* 'to sleep in'. Particles like *zu-* add a dative argument, which is inserted to the lexical representation of the base via its goal argument P, (cf. the simplified representation in 4, see article 23 on particle-verb formation, Olsen 1997b: 317 and Wegener 1991):

(4)   a.   *werfen* 'throw'
             $\lambda P\ \lambda y\ \lambda x$ [THROW(x,y) and P(y)]
       b.   *zu* 'to'
             $\lambda z_{DATIVE}\ \lambda y$ [BECOME(LOC(y,AT(z)))]
       c.   *zuwerfen* 'throw to; lit. to$_{PART}$-throw'
             $\lambda z_{DATIVE}\ \lambda y\ \lambda x$ [THROW(x,y) and BECOME(LOC(y,AT(z)))]

The dative argument must be satisfied by an expression denoting an animate goal in German, see (5a). Inanimate entities can link with a corresponding (directional) prepositional phrase only, see (5b), cf. Olsen (1997b: 325), Witt (1998: 85 f.):

(5)   a.   *den Ball dem Kind* / **dem Korb zuwerfen*
             the ball the child$_{DATIVE}$ / the basket$_{DATIVE}$ to$_{PART}$-throw
       b.   *den Ball zu dem Korb werfen*
             the ball to the basket throw

Similarly, particle verbs with the particle *ein-* 'in' do not accept animate goals linked with a PP, cf. ibid.:

(6)   *das Gebiss *in den Patienten* / *in den Mund* / *dem Patienten einlegen*
             the denture into the patient$_{ACCUSATIVE}$ / in the mouth / the patient$_{DATIVE}$ insert

In addition to such systematic derivational constraints, any theory of linking in prefixation must also allow for specific lexical differences between the derived forms. For example, the internal argument slot of the verb *believe* can be realized by an ACI, cf. *I*

believe him to be smart, whereas the prefixed form *disbelieve* cannot, **I disbelieve him to be smart*, cf. Bauer (1983: 60), Carlson and Roeper (1981).

Like prefixation, suffixation affects the AS of the input form. For instance, the suffix *-ize* attaches to nominal and adjectival bases and produces a verb with an internal argument, i.e. causative/transitive verbs like *symbolize*, *modernize* or inchoative/unaccusative verbs like *oxidize*, *aerosolize*. Despite their wide-ranging polysemy (cf. Lieber 2004: 77), Plag (1999: 137) assumes a unified lexico-conceptual representation for *-ize* verbs, which can realize both a transitive and an unaccusative verb form achieved through the optionality of the constant CAUSE. Note, though, that the implication of this assumption, i.e. the non-causativity of inchoative verbs, is subject to constant debate, cf. Bierwisch (2006), Chierchia (2004), Härtl (2013), Koontz-Garboden (2009), Levin and Rappaport-Hovav (1995). Lieber (2004) proposes a unitary lexical template for *-ize* and *-ify* verbs as well but derives their individual differences from the semantic category of the base and specific co-indexation configurations holding between the arguments of the affix and the base, cf. Lieber (2004: 81 ff.). A more abstract perspective is taken by Williams (1981a), where an *-ize* derivation is achieved through the mechanisms of externalization and internalization of argument slots, cf. also Spencer (1991: 193) and section 4 above:

(7)   *modern* (THEME) → *modernize* (AGENT, THEME)

As we have seen, any theorizing about the link between word-formation and AS has to consider a wide range of linguistic phenomena, such as thematic role content, animacy, case, morpho-syntactic marking, etc., as well as structural configurations like transitivity or externalization. Another word-formation domain where the interplay of a broad variety of linguistic factors is particularly evident is that of nominalization, which we shall have a more detailed look at in the following section.

4.2. Nominalization

The term *nominalization* covers a broad range of morpho-syntactic operations, which all produce a nominal of some kind. Thus, e.g., gerunds like *criticizing*, agent and instrument nouns (*opener*), deverbal nouns (*description*) in general as well as synthetic compounds (*car driver*) fall under this category, with the question being relevant here if and how they inherit the AS of the underlying verb. The perspectives on this issue vary radically: from the assumption that deverbal nouns do not contain any AS features or that they have their own AS to the classical view that the AS of the underlying verb is fully inherited by the derived form; for overviews see Alexiadou (2010), Spencer (1991: 324 ff.) and article 33 on synthetic compounds in German.

According to the standard view, i.e. that the AS of the verb is copied over to the deverbal nominal, linking conditions control the verb's internal argument, which is assigned structural accusative case in languages like German, to be realized as a structural genitive, cf. *die Stadt beschreiben* 'to describe the city' → *die Beschreibung der Stadt* 'the description of the city', cf. Olsen (1986). Such canonical linking postulations, however, are challenged by deviations where the internal argument links with a PP in a derived nominal, cf. *die Feinde hassen* 'to hate the enemies' → *der Hass *der Feinde* /

auf die Feinde 'the hatred of the enemies / towards the enemies', cf. Lindauer (1995), Ehrich and Rapp (2000). This has led some researchers to conclude that derived nominals are equipped with their own AS, which is determined by semantic aspects like the event-structural properties of the nominal, cf. Grimshaw (1990), or the affectedness of the lowest argument, cf. Ehrich and Rapp (2000) and section 4.2.3 for further details.

On the other end of the theoretical spectrum we find approaches in which no verbal AS features are present in the grammatical representation of derived nominals. To substantiate this conception, in many cases the ontological differences between nouns and verbs are brought forward and, in particular, the optionality of the arguments of nouns, cf. Dowty (1998), Kayne (2008). Kaufmann (2002) argues that nouns do not exhibit a fixed array of linkers and considers the "arguments" of nouns to be semantic attributes instead, for which certain interpretative defaults apply. Likewise, Fanselow (1988) employs what he calls prominent meaning relations holding between the constituents of complex nouns, thus, making lexical-semantic argument positions redundant. According to Fanselow, this applies to derived nominals like *Verfasser des Buches* 'composer of the book' as well, for which a stereotypical relation like WRITE needs to be deduced thus explaining its parallels in meaning to non-derived nouns like *Autor des Buches* 'author of the book' (cf. Olsen 1992 for critical discussion). Problematic for such concept-based approaches are linking differences between deverbal nominals like *Jill's shock* vs. *Jill's attempt*. Here, parallel prominence relations link crosswise such that the genitive NP of a nominalized psych-predicate like *shock* links with an internal experiencer argument, whereas with *attempt* the genitive is linked with the external agent argument (cf. Bauer 1983: 77). This behavior can only be explained by dint of the predicates' lexical-semantic properties, which have to be somehow active in the derivation.

4.2.1. Linking conditions on nominalization

According to several theories, inter alia Grimshaw's (1990) prominence theory, external arguments cannot be realized within synthetic compounds, cf. **gourmet-eating, *tourist-arriving, *child-sleeper*. A similar restriction is implemented by Selkirk (1982), where the author employs her subject condition to allow only internal arguments to appear within a synthetic compound (cf. also Chomsky 1970). Borer (2003) doubts the validity of a general constraint against external arguments occurring within derived nominals, providing examples of *-ion* nouns, where a genitive NP is linked with an agent role, i.e. an apparent external argument, cf. *the enemy's destruction of the city*. Also, Di Sciullo (1992) questions the rigidity of the constraint in reference to examples like *expert-tested*, in which the noun contained in the compound is associated with the external argument role of the base verb as well (ibid.: 66). Baker (1998) makes the same observation although with a different interpretation: According to Baker, the linking behavior of such adjectival constructions (i.e. *expert-tested* as in *expert-tested guide*) is expected under the subject condition because the agent role of a past participle form does not figure as an external argument but as an internal one. Rather, it is the theme (i.e. *guide*), which functions as the external argument of the adjectival predicate (ibid.: 191). Note, however, that AS based approaches, in general, are weakened by the noticeable degree of non-productivity of the construction. While, for example, constructions like *expert-tested*

guide or *chef-cooked dish* may well be acceptable, a less stereotypical relation between the roles involved renders the expression odd, cf. ??*grandmother-knitted sweater*, ??*professor-taught subject*. Alternatively, what seems to play a role here is the conceptual salience of the property expressed with the adjective, which determines its interpretability and which makes its analysis as synthetic compound in the narrow sense redundant. Such a view is compatible with approaches which favor an analysis based on free interpretation, like Marantz's (1997). These assume, along the lines of Grimshaw (1990) and the above restriction against external arguments, that agent-like genitives in phrases like *the King's separation of the family* should rather be characterized as POSSESSORS, which happen to correspond to an agent interpretation based on conceptual knowledge, cf. Borer (2003) for critical discussion. The accessibility of such agent readings independent of AS is also evident in NPs like *the German invasion*, where the modifier *German* can receive both an agent interpretation as well as a theme interpretation, cf. Roeper and van Hout (1999). It is clear, however, that the adjective does not function as an argument, at least on the theme interpretation: as soon as an explicit agent is provided, the theme reading of *German* is no longer available, cf. **the German invasion by France* (ibid.: 8).

4.2.2. Nominalization with *-er* and *-ee*

The structural status of the arguments as external or internal is also relevant in *-er* nominalizations. A standard assumption comes from Levin and Rappaport (1988: 1068), who formulate a requirement for the bases of *-er* nominals that they contain an external argument, cf. *appealer* vs. **appearer*, which is bound by the affix (cf. Di Sciullo 1992: 73). The specific thematic content of the role is not decisive, see Fleischer and Barz (1995: 151 ff.), Lieber (2004: 17) for lists of possible meanings of *-er* nominals. Furthermore, instrument interpretations are grammatical if this role can also be realized as subject of a corresponding proposition, cf. Levin and Rappaport (1988: 1071 f.), Rainer (2005: 348 f.):

(8)   a.   A metal gadget opened the can.
            → can opener_{INSTRUMENT}
      b.   *A silver fork ate the meat.
            → *meat eater_{INSTRUMENT}

It is commonly assumed that deverbal *-er* nominals (or a subset of them, see below), in some way, inherit the object arguments of the base, cf. *baker of bread*, *giver of presents to children*, which Lieber (2004: 61 f.) captures using her principle of co-indexation, see also section 3.1 above. Object arguments are not inherited in compound expressions containing a gerund, cf. **baking man of bread*, **frying pan of meat*, cf. Di Sciullo and Williams (1987). Besides, there are also several instances of *-er* nominals like *villager* and *Londoner*, which are not related to a verbal base, cf. Booij and Lieber (2004), Fleischer and Barz (1995: 154 f.) and, for diachronic aspects relevant in this context, Meibauer, Guttropf and Scherer (2004).

   Di Sciullo (1992) examines Italian verb-noun compounds like *taglia-carte* 'paper cutter; lit. cut-paper' and claims that the external argument of the verbal part is realized

guide or *chef-cooked dish* may well be acceptable, a less stereotypical relation between the roles involved renders the expression odd, cf. ??*grandmother-knitted sweater*, ??*professor-taught subject*. Alternatively, what seems to play a role here is the conceptual salience of the property expressed with the adjective, which determines its interpretability and which makes its analysis as synthetic compound in the narrow sense redundant. Such a view is compatible with approaches which favor an analysis based on free interpretation, like Marantz's (1997). These assume, along the lines of Grimshaw (1990) and the above restriction against external arguments, that agent-like genitives in phrases like *the King's separation of the family* should rather be characterized as POSSESSORS, which happen to correspond to an agent interpretation based on conceptual knowledge, cf. Borer (2003) for critical discussion. The accessibility of such agent readings independent of AS is also evident in NPs like *the German invasion*, where the modifier *German* can receive both an agent interpretation as well as a theme interpretation, cf. Roeper and van Hout (1999). It is clear, however, that the adjective does not function as an argument, at least on the theme interpretation: as soon as an explicit agent is provided, the theme reading of *German* is no longer available, cf. **the German invasion by France* (ibid.: 8).

4.2.2. Nominalization with *-er* and *-ee*

The structural status of the arguments as external or internal is also relevant in *-er* nominalizations. A standard assumption comes from Levin and Rappaport (1988: 1068), who formulate a requirement for the bases of *-er* nominals that they contain an external argument, cf. *appealer* vs. **appearer*, which is bound by the affix (cf. Di Sciullo 1992: 73). The specific thematic content of the role is not decisive, see Fleischer and Barz (1995: 151 ff.), Lieber (2004: 17) for lists of possible meanings of *-er* nominals. Furthermore, instrument interpretations are grammatical if this role can also be realized as subject of a corresponding proposition, cf. Levin and Rappaport (1988: 1071 f.), Rainer (2005: 348 f.):

(8)   a.   A metal gadget opened the can.
            → can opener$_{\text{INSTRUMENT}}$
      b.   *A silver fork ate the meat.
            → *meat eater$_{\text{INSTRUMENT}}$

It is commonly assumed that deverbal *-er* nominals (or a subset of them, see below), in some way, inherit the object arguments of the base, cf. *baker of bread*, *giver of presents to children*, which Lieber (2004: 61 f.) captures using her principle of co-indexation, see also section 3.1 above. Object arguments are not inherited in compound expressions containing a gerund, cf. **baking man of bread*, **frying pan of meat*, cf. Di Sciullo and Williams (1987). Besides, there are also several instances of *-er* nominals like *villager* and *Londoner*, which are not related to a verbal base, cf. Booij and Lieber (2004), Fleischer and Barz (1995: 154 f.) and, for diachronic aspects relevant in this context, Meibauer, Guttropf and Scherer (2004).

   Di Sciullo (1992) examines Italian verb-noun compounds like *taglia-carte* 'paper cutter; lit. cut-paper' and claims that the external argument of the verbal part is realized

as *pro* (existent in Italian but not in English or German) inside the compound. According to Di Sciullo, this explains the unavailability of synthetic *-ore* '-er' compounds in Italian, as this affix, too, binds an external argument role. As a result, the external argument would be satisfied twice in a synthetic *-ore* compound thus producing a theta criterion violation, cf. **tagliatore-carte* (ibid.: 72). Note that Di Sciullo uses this argumentation to strengthen her reservations against the subject condition, which bans external arguments from being realized within compounds, see the previous section.

A concept-based restriction on deverbal *-er* nominals (and synthetic compounds in general) is that they cannot contain cognate objects as non-head, cf. **tear crier*, **dream dreamer*, as they render the compound's meaning tautological. Instead, a cognate object requires a taxonomic specification of the argument expression: *false tears crier*, *nightmare dreamer*. Similar observations have been made for unacceptable noun-noun compounds like **furniture chair* or **animal horse*, with the explanation that a modifier of a compound must always bring about an ontological specification of the head noun's extension, cf. Meyer (1993: 102), Štekauer (2005: 11).

Along with event structural factors, which we shall examine in the next section, it is also the optionality of the predicate's internal argument, which determines the interpretation of deverbal *-er* nominals. Olsen (2000: 907) observes that, for example, *tree devourer*, due to the obligatory internal argument of *devour*, receives an interpretation of an entity that devours trees, whereas *tree* in *tree eater*, which contains a predicate with an omissible internal argument, is open for an interpretation as a locative modifier, i.e. an eater in trees.

Nouns with the *-ee* suffix (present in English but not in Dutch and as a less productive equivalent *-ling* in German, as in *Prüfling* 'test-ee', *Ankömmling* 'arriv-ee') can be derivatives of transitive verbs, cf. *employee*, *trainee*. In these cases, the derived noun is related to the object argument of the predicate. But we also find subject-oriented *-ee* nouns, like *escapee*, *attendee*, and nouns that derive from genuinely intransitive verbs, like *standee*, again questioning conventional accounts based on AS inheritance (cf. Barker 1998, Spencer 2005 and article 52 on semantic restrictions on word-formation). The selectional characteristics of *-ee* have also led to several semantic treatments of the derivation, where semantic-conceptual features associated with volitionality and sentience are put in focus of the theoretical description, cf., e.g., Booij and Lieber (2004).

Note that *-er* nominals with an *of*-complement cannot receive an instrument reading as only an agentive-eventive interpretation is possible with them: **opener*$_{\text{INSTRUMENT}}$ *of cans*, **sharpener*$_{\text{INSTRUMENT}}$ *of knives*. This has led to the well-known assumption that only eventive *-er* nominals inherit the verbal AS and can hence realize an *of*-complement, whereas non-eventive ones cannot, cf. van Hout and Roeper (1998), Levin and Rappaport (1988). Thus, for instance, *destroyer of the city* denotes somebody who has actually destroyed something at some time, whereas a *destroyer*, i.e. a warship, may never destroy anything (ibid.: 1069). Olsen (1992: 23 f.), however, points to the influence of the determiner semantics in this context and discusses examples like *closer of gates*, which, although an *-er*$_{\text{AS}}$ nominal in Levin and Rappaport's conception, receive a non-eventive, generic interpretation, cf. also Alexiadou and Schäfer (2010) for a related aspectual analysis as well as McIntyre (2010) for discussion. Generic qualities are also reflected in compounds and in the well-described non-referentiality of the modifier of a compound (cf. Lawrenz 1996, Meibauer 2007), which, in turn, promotes the instrument reading of a synthetic *-er* compound like *knife sharpener*.

4.2.3. Event structural conditions on nominalization

Event structural properties have long been argued to determine the availability of AS in nominalizations. One of the standard assumptions can be traced back to Grimshaw (1990). She assumes that the presence of AS in a deverbal nominal depends on whether the nominal denotes a process, i.e. a complex event, or rather a non-eventive result of some event (ibid.: 49):

(9)   a.   The examination$_{\text{PROCESS}}$ of the student was in the office at 12:00.
       b.   The exam$_{\text{RESULT}}$ (??of the student) was in the drawer.

Process nominals can be identified in time and space and can hence combine with temporal and spatial modifiers, cf. (9a), whereas result nominals can only be spatially identified, as (9b) illustrates. The underlying idea is that complements in NPs are not altogether optional; instead, only nominals lacking aspectual structure do not exhibit AS. A number of grammatical criteria have been isolated to substantiate the grammatical distinction displayed in (9), one of them being that a genitive NP in process nominals is linked with an agent role, whereas it is linked with a possessor role in result nominals, cf. *the teacher's examination of the student* vs. *the teacher's exam*, cf. (ibid.: 51) and Alexiadou (2001: 10 ff.), Alexiadou and Grimshaw (2008) for overviews of the differences between the two types. Criticism raised against Grimshaw's original concept holds that, among other things, process nominals, too, do not necessarily require all their roles to be realized, as is illustrated in *An unskilled instructor's examination will take a long time*, where the internal argument of *examine* is not realized, cf. Pustejovsky (1995: 257 f.).

     Problematic for the above distinction is also the significant number of deverbal nouns which realize their internal argument overtly but can still receive a result interpretation as in *The written description of the painting is in the drawer*, cf. Bierwisch (1989), (2009). As McIntyre (p.c.) notes, however, the problem dissolves under the assumption that the PP *of the painting* in this example does not link with the object argument of the verbal base but rather figures as an *of*-complementation to a relational noun on a par with non-deverbal nouns like *replica*, as in *replica of the painting*. A related assumption is implied in Grimshaw's (1990) distinction between *of*-phrases functioning as arguments ("a-adjuncts" in her terminology) and those functioning as "modifiers". For example, *of the girl* in *picture of the girl* containing the relational noun *picture* is described as a modifier by Grimshaw (1990: 144). Following this logic, the PP *of the painting* in *description*$_{\text{RESULT}}$ *of the painting* figures as a modifier just as it figures as a modifier of the noun *replica* or *picture*. The distinction between *of*-modifier and *of*-argument is reflected in the separability of *of*-modifiers from their head, cf. *The picture was of the girl* vs. **The destruction was of the city*, which Grimshaw attributes to the locality restriction of theta-assignment holding for arguments but not for modifiers. This, in turn, predicts that the above *-ion* noun with a result reading can be separated from a (non-argument) *of*-phrase, whereas the corresponding process nominal is predicted not to be detachable from the *of*-phrase. This is indeed supported by the following contrast:

(10)   a.   The written description$_{\text{RESULT}}$ was [of the painting]$_{\text{MODIFIER}}$.
       b.   *The frequent description$_{\text{PROCESS}}$ was [of the painting]$_{\text{ARGUMENT}}$.

Alternative perspectives on the correlation between nominalization and AS realization put a stronger focus on the lexical-semantic qualities of the nouns involved. For example, Ehrich and Rapp (2000) consider verbal and nominal ASs to be completely independent of each other, each equipped with its own individual linking rules. Here, the linking properties of a deverbal noun, process nominal or not, are not derived from the underlying verb and, as the authors assume, it is the feature of affectedness, which determines the linking properties of arguments. The basic idea is that the interpretation of a postnominal genitive NP, in German, depends on whether the noun's semantic representation contains a BECOME-operator: a postnominal genitive will always be interpreted, when present, as the lowest argument under BECOME, i.e. as an affected theme. This explains why postnominal genitives in NPs like *Hinrichtung des Henkers* 'execution of the hangman', which involve an affected object, can only be interpreted as theme, while non-affecting predicates can realize any role in this position, cf. *Entdeckung des Seefahrers*AGENT/THEME 'discovery of the sailor', *Verehrung der Mädchen*EXPERIENCER/THEME 'adoration of the girls', cf. (ibid.: 279 f.). The factor of affectedness has also been observed to have an impact on the preposing of object NPs, which are banned from a prenominal position in a deverbal nominal if they denote an unaffected object: *the fact's knowledge* vs. *the city's destruction*, cf. Anderson (1977, 2007: 121 ff.). It has been argued that the affectedness constraint on preposed NPs is subject to parameterization as no restriction in terms of NP-internal fronting is active, for example, in Greek, cf. Alexiadou (2001: 94 ff.) for discussion.

Event-structural conditions on AS linking can be found to be active elsewhere in word-formation. For instance, aspectual properties have also been described as a key factor determining the locative alternation (see section 4.1) and producing the meaning differences anchored in the alternating pairs, cf. Olsen (1994). This illustrates, all in all, that only a wide-ranging and interrelated view on the different components of the linguistic system and its interfaces will contribute to a full understanding of the lexical productivity in human language.

5. References

Ackema, Peter and Ad Neeleman
   2004   *Beyond Morphology. Interface Conditions on Word Formation*. Oxford: Oxford University Press.

Alexiadou, Artemis
   2001   *Functional Structure in Nominals. Nominalization and Ergativity*. Amsterdam/Philadelphia: Benjamins.

Alexiadou, Artemis
   2010   Nominalizations: A probe into the architecture of grammar. *Language and Linguistics Compass* 4: 496−511.

Alexiadou, Artemis and Jane Grimshaw
   2008   Verbs, nouns and affixation. In: Florian Schäfer (ed.), *SinSpeC 1. Working Papers of the SFB 732*, 1−16. Stuttgart: OPUS.

Alexiadou, Artemis and Florian Schäfer
   2010   On the syntax of episodical vs. dispositional *-er* nominals. In: Artemis Alexiadou and Monika Rathert (eds.), *Nominalizations Across Languages and Frameworks*, 9−38. Berlin: Mouton de Gruyter.

Anderson, Mona
  1977   NP preposing in noun phrases. *North-Eastern Linguistic Society* 8: 12−21.
Anderson, Mona
  2007   Affectedness. In: Martin Everaert and Henk van Riemsdijk (eds.), *The Blackwell Companion to Syntax*, 121−141. Malden, MA: Blackwell.
Anderson, Stephen R.
  1992   *A-morphous Morphology*. Cambridge, MA: Cambridge University Press.
Baker, Mark
  1988   *Incorporation. A Theory of Grammatical Function Changing*. Chicago, IL: University of Chicago Press.
Baker, Mark
  1998   Comments on the paper by Sadock. In: Steven G. Lapointe, Diane K. Brentari and Patrick M. Farrell (eds.), *Morphology and its Relation to Phonology and Syntax*, 188−212. Stanford, CA: CSLI.
Barker, Chris
  1998   Episodic *-ee* in English: A thematic role constraint on new word formation. *Language* 74: 695−727.
Bauer, Laurie
  1983   *English Word-Formation*. Cambridge, MA: Cambridge University Press.
Bierwisch, Manfred
  1989   Event nominalizations: Proposals and problems. In: Wolfgang Motsch (ed.), *Wortstruktur und Satzstruktur*, 1−73. Berlin: Akademie Verlag.
Bierwisch, Manfred
  2006   German reflexives as proper and improper arguments. In: Patrick Brandt and Eric Fuß (eds.), *Form, Structure, and Grammar. A Festschrift Presented to Günther Grewendorf on Occasion of his 60ᵗʰ Birthday*, 15−36. Berlin: Akademie Verlag.
Bierwisch, Manfred
  2009   Nominalization − lexical and syntactic aspects. In: Anastasia Giannakidou and Monika Rathert (eds.), *Quantification, Definiteness, and Nominalization*. Oxford: Oxford University Press.
Booij, Geert
  1992   Morphology, semantics, and argument structure. In: Iggy Roca (ed.), *Thematic Structure. Its Role in Grammar*, 27−50. Dordrecht: Foris.
Booij, Geert
  2009a   Lexical integrity as a formal universal: A constructionist view. In: Sergio Scalise, Elisabetta Magni and Antonietta Bisetto (eds.), *Universals of Language Today*, 83−100. Berlin: Springer.
Booij, Geert
  2009b   Phrasal names: A constructionist analysis. *Word Structure* 2: 219−240.
Booij, Geert and Rochelle Lieber
  2004   On the paradigmatic nature of affixal semantics in English and Dutch. *Linguistics* 42: 327−357.
Borer, Hagit
  1991   The causative-inchoative alternation: A case study in parallel morphology. *The Linguistic Review* 8(2−4): 119−158.
Borer, Hagit
  2003   Exo-skeletal vs. endo-skeletal explanations: Syntactic projections and the lexicon. In: John Moore and Maria Polinsky (eds.), *The Nature of Explanation in Linguistic Theory*, 31−67. Stanford, CA: CSLI.
Carlson, Greg and Thomas Roeper
  1981   Morphology and subcategorization: Case and the unmarked complex verb. In: Teun Hoekstra, Harry van der Hulst and Michael Moortgat (eds.), *Lexical Grammar*, 123−164. Dordrecht: Foris.

Carstairs-McCarthy, Andrew
  2010   *The Evolution of Morphology*. Oxford: Oxford University Press.
Chierchia, Gennaro
  2004   A semantics for unaccusatives and its syntactic consequences. In: Artemis Alexiadou,
            Elena Anagnostopoulou and Martin Everaert (eds.), *The Unaccusativity Puzzle*, 22−59.
            Oxford: Oxford University Press.
Chomsky, Noam
  1970   Remarks on nominalization. In: Roderick A. Jacobs and Peter S. Rosenbaum (eds.),
            Readings in English Transformational Grammar, 184−221. Waltham, MA: Blaisdell.
Chomsky, Noam
  1981   *Lectures on Government and Binding*. Dordrecht: Foris.
Dehé, Nicole, Ray Jackendoff, Andrew McIntyre and Silke Urban (eds.)
  2002   *Verb Particle Explorations*. Berlin: Mouton de Gruyter.
Di Sciullo, Anna Maria
  1992   Deverbal compounds and the external argument. In: Iggy M. Roca (ed.), *Thematic Struc-
            ture. Its Role in Grammar*, 65−78. Dordrecht: Foris.
Di Sciullo, Anna Maria
  2005   Decomposing compounds. *SKASE Journal of Theoretical Linguistics* 2(3): 14−33.
Di Sciullo, Anna Maria and Edwin Williams
  1987   *On the Definition of Word*. Cambridge, MA: MIT Press.
Dowty, David
  1989   On the semantic content of the notion thematic role. In: Gennaro Chierchia, Barbara
            Partee and Raymond Turner (eds.), *Properties, Types and Meanings. Semantic Issues*,
            69−129. Dordrecht: Kluwer.
Ehrich, Veronika and Irene Rapp
  2000   Sortale Bedeutung und Argumentstruktur: *ung*-Nominalisierungen im Deutschen. *Zeit-
            schrift für Sprachwissenschaft* 19(2): 245−303.
Fanselow, Gisbert
  1988   Word syntax and semantic principles. In: Geert Booij and Jaap van Marle (eds.), *Year-
            book of Morphology 1988*, 95−122. Dordrecht: Foris.
Fleischer, Wolfgang and Irmhild Barz
  1995   *Wortbildung der deutschen Gegenwartssprache.* 2nd ed. Tübingen: Niemeyer.
Gagné, Christina L. and Edward J. Shoben
  1997   The influence of thematic relations on the comprehension of non-predicating conceptual
            combinations. *Journal of Experimental Psychology: Learning, Memory, and Cognition*
            23: 71−87.
Grimshaw, Jane
  1990   *Argument Structure*. Cambridge, MA: MIT Press.
Günther, Hartmut
  1987   Wortbildung, Syntax, *be*-Verben und das Lexikon. *Beiträge zur Geschichte der deut-
            schen Sprache und Literatur* 109: 179−201.
Harley, Heidi
  2008   Compounding in distributed morphology. In: Rochelle Lieber and Pavol Štekauer (eds.),
            The Oxford Handbook of Compounding, 129−144. Oxford: Oxford University Press.
Härtl, Holden
  2001   *CAUSE und CHANGE. Thematische Relationen und Ereignisstrukturen in Konzeptualis-
            ierung und Grammatikalisierung*. Berlin: Akademie Verlag.
Härtl, Holden
  2013   Generic rescue: Argument alternations and the monotonicity condition. In: Patrick
            Brandt and Eric Fuß (eds.), *Repairs. The Added Value of Being Wrong*, 95−130. Berlin/
            New York: Mouton de Gruyter.

Hout, Angeliek van and Thomas Roeper
   1998   Events and aspectual structure in derivational morphology. *MIT Working Papers in Linguistics* 32: 175−220.

Jackendoff, Ray
   1975   Morphological and semantic regularities in the lexicon. *Language* 51(3): 639−671.

Kastovsky, Dieter
   2005   Hans Marchand and the Marchandeans. In: Pavol Štekauer and Rochelle Lieber (eds.), *Handbook of Word-Formation*, 99−124. Dordrecht: Springer.

Kaufmann, Ingrid
   2002   Infinitivnominalisierungen von reflexiven Verben: Evidenz gegen Argumentstrukturvererbung? In: Claudia Maienborn (ed.), *(A)Symmetrien − (A)Symmetries. Beiträge zu Ehren von Ewald Lang / Papers in Honor of Ewald Lang*, 203−232. Tübingen: Stauffenburg.

Kayne, Richard
   2008   Antisymmetry and the lexicon. *Linguistic Variation Yearbook* 8: 1−32.

Koontz-Garboden, Andrew
   2009   Anticausativization. *Natural Language and Linguistic Theory* 27: 77−138.

Lakoff, George
   1970   *Irregularity in Syntax*. New York: Holt, Rinehart and Winston.

Lawrenz, Birgit
   1996   *Der Zwischen-den-Mahlzeiten-Imbiß* und *der Herren-der-Welt-Größenwahn*: Aspekte der Struktur und Bildungsweisen von Phrasenkomposita im Deutschen. *Zeitschrift für Germanistische Linguistik* 24: 1−15.

Lees, Robert B.
   1960   *The Grammar of English Nominalizations*. Bloomington, IN: Indiana University Press.

Levi, Judith N.
   1978   *The Syntax and Semantics of Complex Nominals*. New York: Academic Press.

Levin, Beth and Malka Rappaport
   1988   Non-event -*er* nominals: A probe into argument structure. *Linguistics* 26: 1067−1083.

Levin, Beth and Malka Rappaport Hovav
   1995   *Unaccusativity. At the Syntax-Lexical Semantics Interface*. Cambridge, MA: MIT Press.

Lieber, Rochelle
   1983   Argument linking and compounds in English. *Linguistic Inquiry* 14(2): 251−285.

Lieber, Rochelle
   1992   *Deconstructing Morphology. Word Formation in Syntactic Theory*. Chicago: University of Chicago Press.

Lieber, Rochelle
   1998   The suffix -*ize* in English: Implications for morphology. In: Steven G. Lapointe, Diane K. Brentari and Patrick M. Farrell (eds.), *Morphology and its Relation to Phonology and Syntax*, 12−33. Stanford, CA: CSLI.

Lieber, Rochelle
   2004   *Morphology and Lexical Semantics*. Cambridge: Cambridge University Press.

Lieber, Rochelle
   2005   Word formation processes in English. In: Pavol Štekauer and Rochelle Lieber (eds.), *Handbook of Word-Formation*, 375−427. Dordrecht: Springer.

Lieber, Rochelle
   2006   The category of roots and the roots of categories. What we learn from selection in derivation. *Morphology* 16: 247−272.

Lindauer, Thomas
   1995   *Genitivattribute. Eine morphosyntaktische Untersuchung zum DP/NP-System*. Tübingen: Niemeyer.

Marantz, Alec
   1997   No escape from syntax. *University of Pennsylvania Working Papers in Linguistics* 4(2):
           201–225.
Marchand, Hans
   1969   *The Categories and Types of Present-Day English Word-Formation. A Synchronic-Dia-
           chronic Approach*. 2nd ed. München: Beck.
McIntyre, Andrew
   2003   Preverbs, argument linking and verb semantics. In: Geert Booij and Jaap van Marle
           (eds.), *Yearbook of Morphology 2003*, 119–144. Dordrecht: Kluwer.
McIntyre, Andrew
   2010   Agentive Nominals and Argument Structure. Ms. Université de Neuchâtel.
Meibauer, Jörg
   2007   How marginal are phrasal compounds? Generalized insertion, expressivity, and I/Q-
           interaction. *Morphology* 17: 233–259.
Meibauer, Jörg, Anja Guttropf and Carmen Scherer
   2004   Dynamic aspects of German -*er*-nominals: A probe into the interrelation of language
           change and language acquisition. *Linguistics* 42(1): 155–193.
Meyer, Ralf
   1993   *Compound Comprehension in Isolation and in Context. The Contribution of Conceptual
           and Discourse Knowledge to the Comprehension of German Novel Noun-Noun Com-
           pounds*. Tübingen: Niemeyer.
Olsen, Susan
   1986   *Wortbildung im Deutschen*. Stuttgart: Kröner.
Olsen, Susan
   1989   *Zur Stellung der Wortbildung in der Grammatik*. Drei Theorien der Affigierung. *Papiere
           zur Linguistik* 40(1): 3–22.
Olsen, Susan
   1992   Zur Grammatik des Wortes: Argumente zur Argumentvererbung. *Linguistische Berichte*
           137: 3–32.
Olsen, Susan
   1994   Lokativalternation im Deutschen und Englischen. *Zeitschrift für Sprachwissenschaft* 13:
           201–235.
Olsen, Susan
   1997a   Zur Kategorie ‚Verbpartikel'. *Beiträge zur Geschichte der deutschen Sprache und Lite-
           ratur* 119(1): 1–32.
Olsen, Susan
   1997b   Der Dativ bei Partikelverben. In: Christa Dürscheid, Monika Schwarz and Karl-Heinz
           Ramers (eds.), *Festschrift für Heinz Vater*, 307–328. Tübingen: Niemeyer.
Olsen, Susan
   1998   *Semantische und konzeptuelle Aspekte der Partikelverbbildung mit* ein-. Tübingen:
           Stauffenburg.
Olsen, Susan
   2000   Composition. In: Geert Booij, Christian Lehmann and Joachim Mugdan (eds.), *Morphol-
           ogy. An International Handbook on Inflection and Word-Formation*. Vol. 1, 897–916.
           Berlin/New York: de Gruyter.
Plag, Ingo
   1999   *Morphological Productivity. Structural Constraints in English Derivation*. Berlin/New
           York: Mouton de Gruyter.
Pustejovsky, James
   1995   *The Generative Lexicon*. Cambridge, MA: MIT Press.

Rainer, Franz
  2005   Constraints on productivity. In: Pavol Štekauer and Rochelle Lieber (eds.), *Handbook of Word-Formation*, 335−352. Dordrecht: Springer.
Randall, Janet
  2010   *The Geometry of Argument Structure*. Dortrecht: Springer.
Rappaport, Malka and Beth Levin
  1988   What to do with theta-roles. In: Wendy Wilkins (ed.), *Thematic Relations*, 7−36. New York: Academic Press.
Roeper, Thomas
  1988   Compound syntax and head movement. In: Geert Booij and Jaap van Marle (eds.), *Yearbook of Morphology 1988*, 187−228. Dordrecht: Foris.
Roeper, Thomas
  2005   Chomsky's remarks and the transformationalist hypothesis. In: Rochelle Lieber and Pavol Štekauer (eds.), *Handbook of English Word-Formation*, 187−228. Dordrecht: Springer.
Roeper, Thomas and Muffy Siegel
  1978   Lexical transformation for verbal compounds. *Linguistic Inquiry* 9: 199−260.
Roeper, Thomas and Angeliek van Hout
  1999   The impact of nominalization on passive, -*able* and middle. Burzio's generalization and feature-movement in the lexicon. In: Liina Pylkkänen, Angeliek van Hout and Heidi Harley (eds.), *Papers from the UPenn/MIT Roundtable on the Lexicon*, 185−211. Cambridge, MA: MIT Press. Online:
            http://people.umass.edu/roeper/online_papers/
            NOM-PASSIVE%20MITWPL%20VAN%20HOUT00.pdf [last access 7 Jan 2015].
Schlücker, Barbara and Ingo Plag
  2011   Compound or phrase? Analogy in naming. *Lingua* 121: 1539−1551.
Scalise, Sergio and Emiliano Guevara
  2005   The lexicalist approach to word-formation and the notion of the lexicon. In: Pavol Štekauer and Rochelle Lieber (eds.), *Handbook of Word-Formation*, 147−187. Dordrecht: Springer.
Selkirk, Elisabeth O.
  1982   *The Syntax of Words*. Cambridge, MA: MIT Press.
Solstad, Torgrim
  2010   Postnominal genitives and prepositional phrases in German: A uniform analysis. In: Artemis Alexiadou and Monika Rathert (eds.), *The Syntax of Nominalizations across Languages and Frameworks*, 219−252. Berlin: Mouton de Gruyter.
Spencer, Andrew
  1991   *Morphological Theory*. Oxford: Blackwell.
Spencer, Andrew
  2005   Word-formation and syntax. In: Pavol Štekauer and Rochelle Lieber (eds.), *Handbook of Word-Formation*, 73−97. Dordrecht: Springer.
Štekauer, Pavol
  2005   *Meaning Predictability in Word Formation. Novel, Context-Free Naming Units*. Amsterdam/ Philadelphia: Benjamins.
Stiebels, Barbara
  1996   *Lexikalische Argumente und Adjunkte. Zum semantischen Beitrag von verbalen Präfixen und Partikeln*. Berlin: Akademie Verlag.
Wegener, Heide
  1991   Der Dativ − ein *struktureller* Kasus? In: Gisbert Fanselow and Sascha W. Felix (eds.), *Strukturen und Merkmale syntaktischer Kategorien*, 70−103. Tübingen: Narr.
Williams, Edwin S.
  1981a   Argument structure and morphology. *The Linguistic Review* 1: 81−114.

Williams, Edwin S.
    1981b   On the notions 'lexically related' and 'head of a word'. *Linguistic Inquiry* 12: 245−274.
Witt, James
    1998   Kompositionalität und Regularität im System der Partikelverben mit *ein-*. In: Susan Olsen (ed.), *Semantische und konzeptuelle Aspekte der Partikelverbbildung mit* ein-, 27−104. Tübingen: Stauffenburg.
Wunderlich, Dieter
    1987   An investigation of lexical composition: The case of German *be*-Verbs. *Linguistics* 25: 283−331.

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