

Paradigmatic word-formation, metonymy and compound verbs in English and Bulgarian

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1. Introduction

Compounds have been widely discussed in the morphological literature. The most hotly debated issues encompass the morphology-syntax interface in the constitution of compounds, mechanisms of meaning computation of the whole, the establishment of reliable criteria for distinguishing a phrase from a compound and models explaining the assignment of stress in compounds. The discussions usually concern nominal compounds (most frequently of the [N N] type) and comments on compound verbs are rare. Admittedly, compound verbs are relatively fewer in comparison to nominal and adjectival compounds in the most widely studied languages. They are frequently considered parasitic, being back-derived or converted from nominal or adjectival compounds (in English). Moreover, their morphotactics usually violates canonical syntactic patterns of combining verbs with various complements and adjuncts (at least in terms of word order). However, it is argued in the current paper that compound verbs constitute a genuine word-formation category and that it is possible to achieve uniformity in their analysis despite the notorious heterogeneity of their formation. It is suggested that by adopting paradigmatic word-formation analysis and accepting metonymy as the basic meaning computation mechanism behind compound verbs, analytical parsimony and uniformity can be attained. Embracing a product view morphotactically, but a process view morphosemantically, in the paper we offer uniform analysis of compound verbs in English and Bulgarian. The paper is structured as follows: in part two the role of paradigms as linguistic entities in word-formation and their utility as an analytical tool are discussed, part three is devoted to a background discussion of metonymy and its relevance to word-formation; part four covers the central characteristics of compound verbs in English and Bulgarian, unifying the role of metonymy and word-formation paradigms in the meaning generation of compound verbs and part five outlines the naturally arising conclusions and suggestions for further research.

2. Word-formation paradigms

2.1 Word-formation between syntagmatic and paradigmatic relations

According to Saussure (1968: 296), the meaning of simple and complex words is assigned in different ways. The meaning of simple words is conventionally assigned by arbitrary mappings between form and content and speakers have to learn these mappings one by one. The meaning of complex words, on the other hand, is motivated and potentially computable. It is based on the meanings associated with the parts and hypotheses about the nature of the relationship that holds them together in a composite whole¹, and partly on the various associative (paradigmatic) relations among linguistic units. The first type of motivating

¹ Under composite whole is understood any derived, non-simplex word no matter whether it has been created by affixation, conversion, compounding or any other among the generally recognized major or minor word-formation patterns.

factors is associated with syntagmatic relations among linguistic elements, while the second type derives from paradigmatic ones.

A logical methodological question, therefore, is whether the choice of one or the other type as a starting point for analysis in word-formation will lead to divergent analytical results. No answer to this question will be provided here, not least because whatever the answer to the methodological quandary, it will not undermine the fact that paradigmaticity is an ontic property of the lexical system of languages (including word-formation).

The interrelatedness and interdependence between syntagmatic and paradigmatic relations between elements in a linguistic system for the establishment of the unique value of a linguistic item within the system has long been acknowledged in linguistics (at least since Saussure's *Course de Linguistique Generale*). Despite this insight, the prevalent view in morphology is that complex words are exclusively derived compositionally from their constituent parts and the operations performed on them, Bach (1989: 46). The operations are mostly considered to involve syntagmatic relations both in terms of form and in terms of meaning. In the influential theory of word-formation developed by Marchand (1969: 3), complex lexical items are considered to be syntagmas based on a determinant/determinatum relationship. However, as Lpika (1981) acknowledges the resulting composite form as a whole is opposed to other simple or complex lexemes². Thus these composite forms contract paradigmatic relations with other lexical items, be them simple or complex. More importantly, Booij (2001) explicitly maintains that the rules for establishing the types of syntagmatic relations between constituents (and all constraints regulating possible combinations thereof, i.e. word-formation rules) are derived on the basis of the paradigmatic relations or associations in form or meaning.

Conceding with Booij (2001: 3), we believe that

In morphology the paradigmatic and syntagmatic dimension of language structure are strongly interwoven. The starting point is a paradigmatic one: we compare a set of verbs with a set of formally and semantically related nouns. On the basis of this comparison, we can conclude the existence of a syntagmatic operation, a word-formation process.

The recognition of different types of word-formation processes as syntagmatic operations is based on establishing the nature of the differences in the paradigmatic relations that hold sets of words together. In cases in which a syntagmatic process cannot be uniquely and exhaustively formulated or when uniform word-formation products come into being as a result of diverse syntagmatic word-formation processes, relying on paradigmatic relations for the analysis of these word-formation products is not only justified, but also desirable. So in the face of the heterogeneity of derivational processes involved in the appearance of compound verbs (composition, i.e. compounding proper, conversion and back-derivation being the standard ones) a uniform analysis can be achieved by applying the notion of the word-formation paradigm.

2.2 Word-formation paradigms

The concept of the word-formation paradigm remains a contentious issue in lexical morphology. It is traditionally associated with inflectional morphology, see Anderson (1992), Aronoff (1994), Stump (2001), among others. An illustrative example of the prevalent

² Nothing of import ensues from the terms lexeme, word and lexical item. For the purposes of the current argument, the three are used interchangeably, with the difference between simplex and complex words deduced from context.

position which sees a sharp boundary between inflectional morphology and word-formation can be found in Stump's comments,

paradigms play a central role in the definition of a language's inflectional morphology. This centrality is manifested in a variety of ways: for example, the sequence in which inflectional rules apply in the realization of a word's morphosyntactic properties may systematically depend on the cell which that word occupies within its paradigm (Stump 2001: 32).

Yet, the recognition of the primacy of paradigmatic relations in certain word-formation processes has led to the acknowledgment of the derivational paradigm³, see Bauer (1997), Becker (1993), Beecher (2004), Bochner (1993), Booij (2001), Booij and Lieber (2004), Pounder (2000), Štekauer (2014), van Marle (1985), as a linguistic fact and as an analytical heuristic in studying derivational morphology; as well as to the recognition of the paradigmatic nature of derivational semantics. Without investing too much theoretical import, we prefer the term *word-formation paradigm* to the more frequently used one *derivational paradigm*. The former name avoids any implications that the concept of paradigm in word-formation is only applicable in affixal processes. More importantly, they differ in terms of schematicity (not unlike the inheritance relations among schemas with different degree of abstractness in a constructionist lexicon, see Booij (2010a: 25-27; 41-43)). The derivational paradigm has local scope and well specified, semantic relations. The word-formation paradigm is more comprehensive and captures the fundamental, general relations among words which are implicated in analogical relations of word-formation relevance. We take this understanding of the word-formation paradigm to be a very fruitful way to provide the ease of tension between processes (understood as rule-application) and products (which might not necessarily arise from the same process but share all their properties as lexical objects, including their morphotactics). We also believe that the word-formation paradigm is indispensable for any analytical undertaking for which analogy is a central mechanism of productive, synchronic word-formation. Thus one local paradigm can be taken as a rough template for analogical construction of further lexical objects which do not inherit or derive any necessary semantic properties from an implicated process of derivation, counter theories of necessary argumental relations in synthetic nominal compounds, see Guevara and Scalise (2004), that will be inherited in a back-formed compound verb, for example. The word-formation paradigm as a network of lexico-semantic relations between words avoids the procedural implications but preserves the potentiality of analogical creations succumbing to conceptually (onomasiologically) determined relations, deriving from "pragmatic pressure" (Booij and Lieber 2004: 350). The lexico-semantic relations in a word-formation paradigm are based on conceptual metonymy and are underlined by frames as the central type of knowledge structure with direct relations with lexical items (to be discussed in the next section).

For the purposes of our argument, following Beecher (2004: 1) we define a word-formation paradigm as "patterns of relationships among derived words", where derived is used in the wide sense of constructed, encompassing all types of complex words. The patterns of relationship are determined by the onomasiological categories with which a specific conceptual space can be associated and which underlie potential words in a language. Once a

³ Even though we use it as a theoretical construct, the derivational (or the word-formation) paradigm is not a mere theoretical invention. Psycholinguistic research on the morphological family size effect (see e.g. Moscoso del Prado Martín et al. 2004) and the processing of compounds (Gagné, Marchak and Spalding 2010; Gagne and Spalding 2009; Libben and Jarema 2006) has provided ample evidence for the psychological reality of the word-formation paradigm and the strongly paradigmatic organization of the mental lexicon.

concept has been emancipated for naming, i.e. has been onomatologically realized (see Štekauer 1998), it sets up, in the form of expectations, a template of possible incidences in different onomasiological types, whose lexical realization is guided by metonymic relations. This constitutes the first type of word-formation paradigm (or word-formation family). This type is a mould for the alternative construal of a linguistically conceptualized domain matrix. Alternative construal relations are lexical topicalizations over a single domain-matrix. It is an onomasiological replica of a frame. Potentially any element can be morphotactically encoded in the symbolic inventory, e.g. *work*_[N], *work*_[V], *work-er*, *work-ing*, *work-ings*, *work-aholic*. The second type of word-formation paradigm is based on same-constituent chains which actualize the same construal over diverse domain matrices, e.g. *-er*: *work-er*, *teach-er*, *read-er*, *sing-er*, *sleep-er*, etc. There is constant crosspollination between the two types of paradigms and both underlie the gradual emergence of more or less productive syntagmatic processes, but only the first type is exclusively prompted and guided by metonymies within or across frames.

3. Metonymy in word-formation

Metonymy is considered a basic cognitive strategy by many scholars, among whom Langacker (1987) and Janda (2011), but it's mostly exploited as an analytical tool at the lexical level (and above) mainly in relation to polysemy, referential chains, and figurative expressions in languages. It is traditionally understood (at least in the structuralist tradition) as a linguistic relation between *signifiés* of words, (e.g. Jakobson (1956), Ullmann (1967)). Within the cognitive linguistics framework, it is understood as a conceptual phenomenon, or as Panther and Thornburg (2003, 2004, 2007) define it, as sets of inferential pathways or natural inference schemas. Despite the numerous points of contention, see Barcelona (2003), Koch (1999, 2000, 2001), Kövesces and Radden (1998), Panther and Thornburg (2007), Piersman and Geeraerts (2006), Radden and Kövesces (1999), among many others, in defining the nature, scope and natural sources of metonymy, there seems to be a general consensus that its *modus operandi* is conceptual contiguity. We side with Koch (2000) in conceiving of metonymy as a powerful meaning generating mechanism in word-formation, based on contiguity, where “contiguity is the relation existing between elements of a prototypical conceptual/perceptual frame or between the frame as a whole and each of its elements” Koch (2000: 1), where each element in the frame can constitute (sub-)frames. Admittedly, for Koch “frame” has “a very general sense, comprising also ‘scene’, ‘scenario’, ‘script’ etc.” (ibid.). This view of the all-encompassing nature of frames is not unique, as Barsalou and Hale (1993: 131) contend “[h]uman knowledge appears to be frames all the way down.” Frame seems to be the most widely accepted operationalization of extralinguistic factors that have direct bearing on linguistic units at the conceptual level. Fillmore (2006: 378) defines the correlation between frames, construal mechanisms and lexical items as a mutually implicating one in which frame is “the structured way in which the scene is presented or remembered [...]. [W]e can say that the frame structures the word-meanings, and that the word ‘evokes’ the frame”. As an operational term for individuating and organizing highly schematized conceptual content, a frame names a gestalt anchored into an actional core. The direct consequence of frames in word-formation is the construal and perspectivization of different backgrounding and foregrounding relations between concepts and the lexical items, where lexical items evoke frames and frames are also capable of evoking conceptually related lexical items.

Working on nominal compounds, Onysko (2010) contends that the semantic frame of the head lies at the center of attention and the sub-frames in it are possible candidates for specification, “the semantic frame of the head offers a basic conceptual map from which

specifiers can emerge via the instantiation of inherently contiguous sub-frames or meaning potentials” (Onysko 2010: 251). In his view, the modifier is conceptually grounded in the semantic frame of the head noun and the word formational process of nominal compounding (in English and German) is guided by contiguous (or metonymical) conceptual relations in the semantic frame of the head. The degree of contiguity between a certain conceptual domain and the head frame can be determined on the basis of the frequency of onomasiological extensions of this conceptual domain in compounds. This can lead to identification of productive and less productive frame internal contiguities (ibid.). The role of frames and conceptual metonymies in the creation of compound verbs is parallel to that in nominal compounds, but the result is not head specification, rather it is uniquely perspectivized scenic representation.

4. Word-formation paradigms, metonymy and compound verbs in English and Bulgarian

Compound verbs⁴ are rather heterogeneous from the point of view of syntagmatic word-formation processes. They can result from compounding – e.g. *stir-fry*, *злодействам* (*zlodeystvam*, ‘evil-do’, *do evil*) back-formation – *baby-sit*, *умопомрачавам* (*se*) (*umopomrachavam* (*se*), ‘mind-darken’, *become deranged/cause somebody to become deranged*) and conversion – *bear hug*. As word-formation products, or a lexical class, compound verbs display uniform properties arising from the powerful role of word-formation paradigms in synchronic word-formation, with constructions accounting for the unique, pattern-based but non-compositional meaning which the specialized construction [XY]V actualizes. The formation of compound verbs relies on the interplay of three basic mechanisms – paradigmatic word-formation as defined by Beecher (2004), metonymy as analyzed by Janda (2011), Koch (1999, 2000, 2001), and Bagasheva (2012, 2014) and analogical modelling as proposed by Booij (2007, 2010a,b), Plag (2006), and Krott (2009). The ubiquity of what Ruiz de Mendoza (2011) calls the ‘cognitive operation’ (i.e. metonymy) in word-formation, based on conceptual frames, as these are defined by Fillmore (1985, 2006), and executed with the help of paradigmatic, synchronic word-formation, motivates and guides the spontaneous enrichment of word-formation paradigms with dynamic, relational construal of the respective domain matrices.

There is one important difference between compound verbs in English and Bulgarian, which does not significantly affect the uniformity of analysis suggested here. English abounds in compound verbs in comparison to Bulgarian. The domains for which in English compound verbs exist cover virtually the whole span of human existence, while compound verbs in Bulgarian are restricted to a few domains and are fully lexicalized. Just to illustrate: a sample of compound verbs naming physical activities (including cooking verbs, drying verbs, feeding verbs, and motion verbs) in English *deep-fry*, *French-fry*, *spin dry*, *rough dry*, *spoon-feed*, *force-feed*, *cold-cock*, *upend*, *bottle brush*, *mud wrestle*, *deadlock*, *frog-march*, *piggyback*, *railroad*, *shuttle-cock*, *cat-foot*, *pussy-foot*, *cliff-hang*, *couch-hop*, *cartwheel*, *nose-dive*, contrasted with an empty set in Bulgarian. The same can be illustrated with verbs

⁴ The analysis proposed here is based on the study of 427 CVs in English and 76 in Bulgarian (the sources from which these have been extracted are cited after the References). The data set excludes i) preposition-V compound verbs and ii) self-V compound verbs. These two groups have been excluded from the analysis because the status of the former as compound verbs in English has been contested (Plag 2003; Lieber 2004, 2009; etc.) and such verbs are not attested in Bulgarian. The second group is characterised by uniform semantics in the two languages – the establishment of a peculiar thematic role *Involved* which combines Agent and Patient (Affected), with the meaning of the second constituent preserved. Any verb in Bulgarian (bar semantic constraints, e.g. verbs of cognition and behavioural verbs) is legible input for such compounding.

relating to financial activities in English: *ear-mark*, *bankroll*, *crowd-surf*, *fund-raise*, *charge-cap*, *short-change*, etc. with not a single compound verb in this domain in Bulgarian. There are a few domains in which the incidence of compound verbs is comparable in the two language, such as speaking verbs (including wider senses like ‘persuasion’ and the like) in English: *small talk*, *fast-talk*, *sweet-talk*, *chin wag*, *backbite*, *foul mouth*, *badmouth*, etc. and in Bulgarian: *злословя* (*zloslovyua*, ‘evi-speak’, *badmouth*) *славословя* (*slavoslovyua*, ‘fame-speak’, *praise*) and *словоблудствам* (*slovobludstvam*, ‘word-abuse’ *blasphemy*).

On the whole it appears that compound verbs in English satisfy onomasiological needs in all kinds of conceptual fields and realize a fully productive constructional idiom, backed-up by a generalized word-formation paradigm, while in Bulgarian, the constructional idiom seems virtually unproductive. Besides this overall difference, there can also be detected a marked preference for packaging Participants and Themes in Bulgarian compound verbs, with Circumstances and Instruments strongly disfavoured, while such constraints do not seem to operate in English. Yet, in both languages compound verbs share the property of naming a single event no matter how complex the internal constituency of the event is and do not involve the integration of separate events into a single whole. This applies even to verb-verb compounds (e.g. *crash-land*, *kick-start*, *spin-dry*, *stir-fry*), which exist only in English and are never created in Bulgarian. The first semantic component in such compounds loses its independent status as a separate activity in the process of conceptual integration and gets streamlined into a Manner, attribute-value specification of the second component that sets the interpretative frame of the whole. Consistent with the semantic preference for lexicalizing Manner, most semantically regular compound verbs in English end up with a Manner component interpretation as in, for example, *rough-dry*, *gift-wrap*, etc., while no such configuring is admitted in Bulgarian.

Despite the outlined differences, from the applied frame semantic analysis⁵ it transpires that compound verbs in both English and Bulgarian arise out of frame-based metonymies which are lexicalized by morphotactic strategies backed up by the word-formation paradigms. In the creation of compound verbs in both languages two basic types of metonymic operations are employed: i) onomatological realization of value specification for a frame constituent or attribute achieved by the latter’s emancipation from part of *the background frame* into the *designated profile*⁶ of the new lexical concept (e.g. *spoon-feed* against *feed*) and ii) word-formation paradigm-induced alternative construal metonymy (dubbed *event-schema metonymy*, Dirven (1999: 279). The second process parallels alternative communicative construal in conversion, described by Farrell (2001) as category underspecification.

The first type of metonymy underlies what we call value-foregrounding compound verbs, in which the basic process of conceptual integration is the emancipation of a second focal point in the profiling of the event. This is achieved by foregrounding a specified value for a frame element and triggering a portion of the potential background frame into what the word designates or its profile. The choice of a core frame element or only a potential circumstance element is dependent on the ease of recoverability; i.e. it is tied up with the range of possible values for that frame element and the graded salience of frame constituents (core component vs. circumstance elements). A core element which is unpredictable within a bearable range

⁵ The analysis has been carried out following the definition of frames, including core participants and circumstance attributes, at FrameNet at <https://framenet.icsi.berkeley.edu/fndrupal/>. Copyright 2000-2011, International Computer Science Institute.

⁶ A word sense’s semantic frame (what the word ‘means’ or ‘evokes’) = profile + background frame; A word sense’s *profile*: what the word designates, asserts; c. A word sense’s *background frame*: what the word takes for granted, presupposes” (Goldberg 2010: 40; emphasis added).

of possibilities in a frame is most likely to be promoted to the profile of a compound verb. There is a direct correlation between predictability rating and the likelihood of being foregrounded in a compound verb. Whenever the core elements are restricted and therefore predictable, it is one of the non-core elements that gets conceptually promoted – e.g. *feed* (only foodstuffs to living organisms) and *dry* (entities containing a certain amount of moisture) and the different values assigned account for the creation of new members of the respective family (*spoon-feed*, *force-feed*, *drip-feed*, etc.). Thus value-foregrounding compound verbs in English end up with a Manner component interpretation.

The second type of metonymy is operative in the creation of we recognize as frame-creating compound verbs (e.g. *red shirt*, *charge-cap*, *deepsix*, *ръкополагам* (rakopolagam, ‘hand-put’, *ordain*), *благославям* (blagoslavyam, ‘sweet-speak’, *bless*)). Event schema metonymy kicks in after metaphoric (and lexicalization) operations in a nominal/adjectival compound have been completed (e.g. *cold-shoulder*). The nominal compound is used as a source for the creation of the compound verb. Frame-creating compound verbs are associated with the activation of a generic space shared with other lexical items (an implicated parent nominal compound) and the subsequent focal specialization and relational construal leading to the creation of a new lexical concept. Paradigmatic ties provide the impetus and guarantee the reprofiling of the conceptual complex as a dynamic, relational one. Here metonymy operates over composites.

In both English and Bulgarian compound verbs can be categorized into two groups: a) pure metonymy-based compound verbs (or the value-foregrounding compound verbs – e.g. *blind date*, *speed date*, *niche date*; *водоснабдявам* (vodosnabdyavam, ‘water-supply’, supply with water), *гласоподавам* (glasopodavam, ‘voice-give’, *vote*)) and B) metonymy-in-metaphor (or the frame-creating compound verbs – e.g. *dipstick*, *railroad*, *главоблъскам* (*ce*) (glavoblaskam (*se*), ‘head-trash’, *worry*) *главозамайвам* (*ce*) (glavozamayvam *se*, ‘head-dizzy’, *get a swell head*), based on the nature of the frame modifications which account for their semantics. The members of the first group of compound verbs are considerably transparent and their second component is directly evoked by the frame, while the first is conceptually derivative via value specification. In frame-creating compound verbs, even though available, the two morphotactic components are not directly integrated into the profile of a relational concept but capitalize on an already metaphonymically configured nominally construed conceptual complex (usually encoded in a compound noun or adjective). Bar any socio-pragmatic constraints, any nominal compound in English can give rise to a compound verb, following paradigmatically conditioned and metonymically motivated patterns of meaning computation. In Bulgarian, despite the fact that the same types of metonymies and word-formation paradigms determine the creation of compound verbs, there are greater constraints on the productivity of compound verbs. Establishing the nature and sources of these constraints is a promising research agenda.

5. Concluding remarks

Before we outline future work, which we hinted at in the preceding section, we need to bring together all loose ends. First the time is ripe for focused analyses of compound verbs for at least in English creating compound verbs is a steadily growing tendency, e.g. Ackema and Neeleman (2004), Bauer (1983), Erdmann (2000, 2009), Nagano (2007), Wald and Besserman (2002), among others. The available analyses, negligible in comparison to the ones devoted to nominal and adjectival compounds, are focused on specific problems, e.g. Erdmann (2009), Nagano (2007) or specific types of compound verbs, e.g. Renner (2008), Wald and Besserman (2002). In more comprehensive works, compound verbs are usually mentioned in passing, e.g. Adams (2001), Bauer (1983), Lieber and Štekauer (2009), Vogel

and Scalise (2010) or they are analyzed using the concepts and models for nominal compounds. Even in the most recent overview of English morphology, Bauer, Lieber and Plag (2013: 465-466, 471-472), compound verbs are explicitly classified into argumental vs. non-argumental, endocentric vs. exocentric, and coordinative vs. subordinative, with the employed criteria being a mixture of syntactic, morphological and semantic considerations. To avoid any such bundling up of criteria and dimensions of analysis, we adopted one meaning-based dimension, namely the role of metonymy in compound verbs. For the sake of parsimony and uniformity, we also chose a paradigm-based approach to word-formation, for the reason that it helps us circumvent different meaning computation mechanisms associated with some of the recognized syntagmatic processes yielding compound verbs. As Becker (1993: 1) claims, quoting Saussure, “morphology is the system of paradigmatic relations between words, new words being formed in analogy to existing ones” (Becker 1993: 1). He elaborates even further “[i]n a paradigmatic morphological theory, words need not have inherent morphological structure. They have their structure through their relations to other words” Becker (1993: 3). Without evoking back-formation, conversion and compounding and expecting the products of each syntagmatic process to have diverse properties, it is possible to consistently analyze word-formation products with uniform properties. We need to recognize a compound verb creating process in English, if as Booij (2001: 10) claims “together, productive processes define the set of possible complex words of a language, and specify how the lexicon of a language can be extended in a systematic way” (Booij 2001: 10-11). The specific nature of this compound verb creating process is the line of research which naturally follows from the argumentation laid in the sections above.

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