On the classification of compound verbs[1]

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1. Introduction

The classificatory scheme one uses and the framework of analysis one applies often skew the identification and interpretation of compounds. Traditionally compounds have been divided into *synthetic* (also called deverbal) such as *horse-riding*, *house-trained* and *root* (also called *primary*) compounds such as *apple pie*, *snow ball* (ten Hacken 2010; Scalise and Bisetto 2009). This classificatory scheme has influenced the understanding and analysis of compounds. The traditional classification described above has been significantly improved by the scheme recently proposed by Scalise and Bisetto (2009), which has led to looking more carefully at the data of compounding (in English), and indeed to finding a much wider range of compound types. Even this classificatory scheme fails to provide an adequate space for the complex nature of compound verbs (henceforth CVs), which seem to disrupt neat classificatory schemes for compounds. Assuming acategorial status of the compound-internal constituents of a CV, postulating a dedicated constructional idiom within an hierarchically organized lexicon and allowing for a dissociation between a word formation process and its products creates a more coherent context for discussing the nature of CVs (in English and Bulgarian) and their classification.

2. Classifications of compounds

The few existing specific CV/VV classifying systems are not consistently (if at all) utilized in the mainstream word-formation literature. Instead, the general classifying systems of compounds are directly applied to CVs in English in the belief that they can well be accommodated within them. Thus, if we uncritically apply the familiar categorization of compounds into root and synthetic compounds to CVs we would have to recognize *sleep-walk* as coordinate and by implication root compound, while *head-hunt* would be analysed as a subordinate, synthetic one. The coordinate (and implicationally derived root) status of *sleep-walk* runs into contradiction with the properties which the CV is presumed to acquire via the word-formation process applied in its creation, namely back-formation. According to Scalise and Bisetto (2009), the root/synthetic parameter is based on language-specific criteria (suited specifically to the reality of compound types in English) and for this reason not widely applicable. The distinction, in our view, is problematic even for English as it involves the recognition of a verbal base in the second group (e.g. *book-keeping*, *truck driver*). Naturally, this would suggest that all CVs are synthetic compounds because they contain a verbal base. Such a generalization is counterintuitive as among CVs we can recognize VVs (e.g. *stir-fry*, *crash-land*) which resemble nominal root compounds in terms of a direct concatenative pattern. Scalise and Bisetto's (2009) classificatory system, which recognizes coordinate, attributive and subordinate compound types with exo- and endocentric variants in each group, avoids

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[1] The evolution of the ideas and the consequtive focusing of the argumentation presented here can be traced in two previous publications, which in expounding on the nature of CVs in the context of different research questions also discuss the advancement of a possible classificatory system for compound verbs (Bagasheva 2011a and Bagasheva 2011b).

the inadequacy of the root/synthetic opposition. However, as argued and illustrated below, even this classificatory system does not accommodate all significant properties of CVs in English and Bulgarian.

Sharing Bauer's dissatisfaction with all proposed schemes for the classification of compounds (Bauer 2006: 724), we believe that none of the available classifying nomenclatures of compounds captures the most relevant variable properties of CVs which should ideally be reflected in the criteria employed for their classification. The ample literature on compound classification (Scalise and Bisetto 2009; Booij 2005; Haspelmath 2002; Bauer 2001; Fabb 2001, to name but a few) provides diverse and sometimes contradictory specific criteria for the classification of CVs, and this generally leads to a heterogeneous set of classificatory systems and terminological confusion. The basic criteria[2] traditionally adopted for the classification of compounds include headedness, the nature of the relationship between the constituents, internal semantics, categorial labels of the head constituent, etc.

Despite their scarcity in comparison to general compound classifying systems, specific classifications of CVs exist. In his explicit classification of CVs Bauer (1983: 207-209) suggests that CVs can be classified by "form class", which leads to the identification of the following classes: "Noun + Verb (e.g. *carbon-date*); Verb + Noun (e.g. *shunpike*); Verb + Verb (e.g. *freeze-dry*); Adjective + Verb (e.g. *free-associate*); Preposition + Verb (e.g. *overachieve*); Adjective + Noun (e.g. *bad-mouth*) and Noun + Noun (e.g. *breath-test*)" (ibid.). Thus the heterogeneous class of CVs is ordered into sets on the basis of presumed well-specified part-of-speech categorial marking of the constituents of a CV. The exact "method of formation" of a CV in each case is not taken into account. Applying this classificatory scheme leads to the recognition of the following CV classes based on lexical categoriality of the constituents:

Table 1: Formal types of CVs

N + V	carbon-copy, babysit, blockbust, главозамайвам се
A + V	soft-land, fine-tune, whitewash, благоустройвам
Prprep + V	outnumber, overachieve, underrate, задминавам, прескачам
V+V	drink-drive, crash-land, dry-clean, stir-fry, Ø
A + N	brown-bag, bad-mouth, blacklist, Ø
N + N	breath-test, Ø
Num+V	double-cross, double-check, двоумя се

This form-based structural classification is supplemented by in-group specifications based on the method/process of formation (which is usually taken to predetermine the meaning properties of CVs, cf. Guevara and Scalise 2004, Lieber 2004, Nagano 2007). Thus the following three classes of CVs are identified:

Table 2: Types of CVs according to derivation pattern

back-derived CVs	converted CVs	compounded CVs
head-hunt ← head-hunting	sandbag → sandbag	drip-dry
breast-feed ← breast-feeding	blacklist → blacklist	sweet-talk
stage-manage ← stage-managing	railroad → railroad	fast-talk

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[2] See Scalise and Bisetto 2009 for a detailed presentation and analysis of available classificatory systems and the criteria they adopt.

In another explicit classification of CVs, narrowed to one of Bauer's classes (VV), Shibatani (1990) suggests the following classifying scheme:

a) modifier-V – where the modifier names the manner of the activity named by the second verb
b) V-modifier – where the second constituent identifies the manner or direction of the verb
c) V-V – where both verbs have equal semantic contribution to the semantics of the whole, naming a complex event (based on Shibatani 1990: 246).

As the classification is proposed in the context of discussing the nature of Japanese VVs, it is not supposed to naturally apply to CVs in English and Bulgarian. The second type V-modifier is not characteristic of English, but the first and third types are attested (e.g. *deep-fry, stir-fry*). In Bulgarian only the first type can be recognized with certain qualifications (e.g. *злословя* [zloslovya, ill-speak, *bad-mouth*]). CVs of the third type (V-V) are not attested in Bulgarian. The distinction between the two types (modifier-V and V-V) resembles the distinction between *stir-fry* and *tap-dance*. The former is classified as a coordinate simultaneous compound (Lieber 2009), the latter is interpreted in varying ways depending on the recognition of *tap* as the activity of tapping or as *a tap* attached to shoes (Wald and Besserman 2002). Admittedly, the first class of VV (modifier-V) is recognizable in cases in which the nature of the first constituent is undecided between a Noun interpretation and a Verb interpretation. In Bauer's commentary of VVs (Bauer 1983: 208) the basic property of the type is the indeterminacy of the first constituent – the four VVs he discusses all display this property. The example he quotes from Marchand "*type-write* might but probably does not belong" to the type. Adams' example *test-market* is dubbed "dubious", "*freeze-dry* does not unambiguously belong in this class either" and the fourth VV *trickle-irrigate* "could be noun + verb or back formation from trickle-irrigation". Wald and Besserman succinctly summarise the problem indicating that

> [c]oncerns about NV are most intimately related to concerns about VV in the very frequent apparent ambiguity of category of the first constituent of the compound, e.g., *sleep* – noun (N1) or verb (V1)? – in *sleep*-walk (Wald and Besserman 2002: 417).

The authors do not specifically address problems of classifications of compounds but devote much of their discussion to the ambiguous category problem, which is among the central problems in the analysis of VVs. They achieve uniformity in the treatment of VVs by settling for the recognition of *possible* VVs coming from various diachronic sources and suggesting that a uniform synchronic analysis is possible if we take into account the activity constraint[3] (for the details of their argumentation see Wald and Besserman 2002). Instead of opting for a uniform possible V interpretation of the first constituent, to avoid the first constituent status controversy, we suggest that the constituents in a CV are categorially indeterminate (an argument we take up in the next section).

Lieber, adopting Scalise and Bisetto's (2009) classification scheme and broadening the subordinate class to include subject-oriented compounds, notes the following about CVs in English, "V+V endocentric compounds can be found, but the type is unproductive: MORBO contains *trickle-irrigate*, and a few others come to mind (*slam-dunk*, *blow-dry*), but these are not freely formed" (Lieber 2009: 359). In two subsequent tables summarizing the types of compounds characteristic of English as an IE, Germanic language, the author classifies *stir-fry* as a simultaneous endocentric coordinate

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[3] "The activity constraint imposes a formal and semantic economy on the internal structure of a compound verb by limiting it to what is necessary to the semantic interpretation of that compound verb, and suppressing what is unnecessary in that context. Thus, when nominal or adjectival marking alters the syntactic properties of the first constituent of a compound, but does not otherwise alter its semantic properties, it is suppressed in favour of the root verb alone in the verb form of that compound" (Wald and Besserman 2002: 423).

compound and *headhunt*, *machine-wash* and *spoon-feed* as "endocentric verb-containing subordinate compounds of the output category V" (ibid.: 360-361) and dubs these "a marginal class" (ibid. 361).

Table 3: A summary of Lieber's (2009: 359-361) classification of CVs in English

	subordinate	coordinate
endocentric	(object) *head-hunt*, [гласоподавам][4] (subject) *machine-wash*, [Ø] (adjunct) *spoon-feed, [зловиди ми се]* (manner) *deep-fry,* [Ø]	*trickle-irrigate, slam-dunk, blow-dry, stir-fry;* [Ø]
exocentric	non-attested	non-attested

Counter Lieber, Bauer believes that "[t]o trickle-irrigate is to irrigate in a particular way" (Bauer n.d: 8). In a like manner,

> *stir-fry* and *freeze-dry* are both headed compounds. The hyponymy test works well here: *stir-frying* is a kind of *frying* (not a kind of *stirring*) and *freeze-drying* is a kind of *drying* (achieved by *freezing*). Again they seem to be excluded from the set of dvandvas (Bauer 2008: 4).

Alongside these criteria, internal (thematic) relations are often exploited as a basis for classifying CVs. Basing the lexico-semantic analysis of CVs on derivational properties has led to the establishment of the following verb-internal relations, which are defined on the basis of the source or parent compound (root or synthetic) giving rise to the CV (Clark and Clark 1979, Nagano 2007) and in accordance with postulated argument relations or semantic roles (Lieber 2004, 2009).

Table 4: Classification of CVs according to compound-internal relations

Object	babysit, head-hunt, прахосмуча
Instrument	spoon-feed, tumble-dry, ръкомахам
Manner	free-associate, soft-land, славословя
Place	quarter-deck, house-train, Ø
Time	day-dream, moon-light, Ø

There is yet another kind of classification provided for converted CVs specifically. Working on Clark and Clark's (1979) thesis of contextuals in conversion, Nagano (2007) comes up with the following classificatory scheme for CVs (both converted and back-formed[5]) based on their semantics,

> "BF from compound nouns or adjectives is semantically parallel to conversion:
> (a) **Locatum**: air-condition (<air-conditioner$_N$), face-lift (<face-lifting$_N$), ill-treat (<ill-treatment$_N$), etc[6].
> (b) **Location**:
> (c) **Goal**: hard-boil (<hard-boiled$_A$), horrorstrike (<horror struck$_A$), jam-pack (<jam-packed$_A$), tongue-tie (<tongue-tied$_A$)

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[4] The Bulgarian examples have been introduced by the author, while the English ones belong to Lieber as indicated by the quotation.

[5] The main hypothesis on which this classificatory scheme is based is that back-formation should be interpreted as conversion. The author concludes that "BF [back-formation] consists of conversion, a rule-based word-formation process, and clipping, a non-rule-based speech-level process, and the various properties of BF have been proved to be deducible form the properties of these two processes" (Nagano 2007: 68).

[6] The author provides numerous examples for each type only a subset of which are directly quoted here for brevity purposes. The use of "etc." indicates that many of the examples for a particular class have been left out in the quotation.

(d) **Manner**: art-edit (<art-editor_N), baby-sit (<baby-sitter_N), match-make (<match-maker_N), etc. tub-thump (<tub-thumper_N), etc.
(e) **Instrument**: hang glide (<hang glider_N), knuckle-dust (<knuckle-duster_N), loud-hail (<loud-hailer_N), etc.
(f) **Duration**:
(g) **Source**:
(h) **Crop**: bird's-nest (<bird's-nesting_N) (Jespersen 1942, 101)
(i) **Action**: (i) book-hunt (<book-hunting_N), hand-write (<hand-writing_N), house-clean (<house-cleaning_N), house-keep (<house-keeping_N), job-hunt (<job-hunting_N), etc. (ii) affix-hop (<affix-hopping_N), brainstorm (<brainstorming_N), etc.
(j) **Sound symbolism**: prize-fight (<prize-fighter_N)
(k) **Unclassifiable**: cliff-hang (<cliff-hanger_N), frostbite (<frostbiting_N) (Matsuda 1999), logroll (<logrolling_N), show-jump (<show-jumping_N), shadow-cast (<shadow-casting_N), skywrite (<skywriting_N)" (Nagano 2007: 62-63; bold face added for clarity and ease of reading).

The belief that the parent noun is necessarily involved in the meaning generation mechanism of a denominal CV leads to implausible lexical semantic interpretations and classifications of attested CVs: see above *air-condition, face-lift, ill-treat, ill-use, pressure-treat, triple-tongue, turbocharge, valet-park* classified as Locatum verbs while *tailor-make*, *jam-pack* and *hard-boil* as Goal and *prize-fight* as Sound-symbolism.

Another semantics-based classification has been proposed, which tries to locally classify the VV structural subtype of CVs. Renner (2008: 611) elaborates the semantic classification of VVs thus

> V.V coordinate compounds belong to three semantic categories: asynchronous compounds, synchronous compounds, and disjunctive compounds. The classification is based on paraphrases, which reveal simultaneity or consecutiveness of events. The disjunctive type contains verbal constituents but its members are nouns and adjectives (e.g. *lend-lease* and *pass-fail*).

This classificatory scheme is doubly restricted: first it takes into account only coordinate verbs (where the coordinate status of the internal relations directly ensues from the lexical categorial status of the first constituent) and second it focuses on VVs exclusively, which is preconditioned by the first criterion in the classification – a coordinate relationship which can only obtain between syntactic elements with the same status (or functional uniformity).

When applying general compound classificatory schemes (criteria) to the classification of CVs, intra-family classificatory dissociations arise, e.g. *stir-fry* is classified as coordinate endocentric as opposed to another member of the word-formation niche *deep-fry* which is categorized as subordinate exocentric (for the definition and discussion of the nature and analytical utility of word-formation niches see Hüning 2009).

3. The problem

The adoption of Scalise and Bisetto's (2009) classifying system seems promising. It predicts the division of CVs into coordinate and subordinate, as an attributive relation is precluded between a verb and an element in its frame (modification is admissible but it is of a different nature from the attributive type of relation). Within each class there is room for distinguishing between endocentric and exocentric CVs, though exocentricity is not recognized as operative in the CV lexicon by Lieber (2009: 360-361, see specifically tables 18.1. and 18.2). As becomes obvious from Lieber's classification of CVs in English (see above), finer subdivisions in the specified endocentric and exocentric subgroups can be established, which relate to the simultanous or consecutive ordering of subevents in a complex event (e.g. *stir-fry*). These finer distinctions presume a classification based on a definite recognition of verbal vs. nominal/adjectival categorial status of the first

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constituent in a CV. The simultaneity/consecutiveness distinction is applicable only in cases in which we recognize a VV compound, which, according to the higher distinguishing property, would all be classified as coordinate.

The scholars' wide-ranging disagreement (cf. Lieber 2009 vs. Bauer n.d., 2008) and the ensuing intra-family classificatory dissociations (cf. *stir-fry* vs. *deep-fry* or *drip-dry* vs. *sun-dry*) hinge crucially on two factors:

a) the assumption that compound constituents have specified lexical (categorial) status (V vs. N, etc.);

b) the premise that compound-internal relations fully subscribe to syntax-determined relations – subordination, coordination and attribution (which are also ultimately dependent on categoriality considerations as the chosen types of relations require categoriality specifications).

The presumably opposed CVs in intra-family dissociations seem to occupy a single semantic space and to develop an identical frame with different values assigned to the relevant dimension of the frame activated in the CV with the MANNER / TO A CERTAIN EFFECT conceptual space activated and symbolically represented. They belong to well-established word-formation niches, which in our view, have unified semantics. We assume that suspending the categoriality of constituents might lead to interesting results concerning the classification of CVs. The question is whether we have good reasons to allow for acategoriality of CV internal constituents?

4. Categorial indeterminacy of CV constituents

Part-of-speech classes are assumed to correlate with experiential complexes (when notionally defined). For many speakers the semantic, syntactic and formal distinctions between nouns and verbs correlate unequivocally with the way they experience the world. As Laudanna observes,

> [f]irst and foremost for speakers of Indo-European languages, language is arranged in such a manner that on the one side it compels to think of the world in terms of nouns as names for objects and verbs as names for actions. On the other side, the phenomenological experience of the world – made up of entities and processes – favours and/or strengthens the characterization of nouns and verbs as labels for the former and the latter, respectively. The *naive* way of thinking, but sometimes *even the scientific reasoning*, is based on this approach to a *supposedly meaningful partition* of the world (Laudanna 2002: 3, emphasis added).

But ongoing debates concerning the cross- and intra-linguistic realities of part-of-speech distinctions and the principles and criteria for their recognition reveal "growing evidence to suggest that the verb-noun distinction is scalar rather than discrete" (Rijkhoff 2002: 115).

This general noun/verb indeterminacy relates directly to the categotiality of constituents controversy. The status of compound constituents as lexemes or root/stems has not been unambiguously settled. Bauer's (2001) idea of formal isolation as a basic criterion for compoundhood is open to interpretations and permist acategorial treatment of the constituents.

> Compound is a lexical unit made up of two or more elements, each of which *can function* as a lexeme independent of the other(s) in other contexts, and which shows *some phonological and/or grammatical isolation from normal syntactic usage* (Bauer 2001: 695, emphasis added).

The fact that it is possible, but not necessary, for a compound constituent to have independent lexemic status, i.e. the optionality of lexemehood and the stipulation for grammatical isolation from normal syntactic usage open up the possibility for postulating categorial indeterminacy of CV constituents. Without explicitly or totally dismissing the relevance of lexical categoriality of CV constituents, Bauer opens the way for relaxing the N/V debate in relation to CV internal constituency.

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Another implicit prerequisite for such an approach can be traced back to Anderson's contention about the uniqueness of compounds as structural units.

> Compounding ... involves the combining of stems from the lexicon into a *quasi-syntactic structure*. This word-internal structure seems to be *unique* to compounds, in fact.... (Anderson 1992:292; emphasis added)

Indeed, one is tempted to claim that the N/V indeterminacy is among the properties that make compounds unique among linguistic elements, but such a conclusion is premature. Hopper and Thompson (2004/1984) put forward the hypothesis about the general categorial indeterminacy of traditional parts-of-speech classifications. They claim that the lexical and semantic properties of verbhood and nounhood are secondary and are primed and ultimately determined by their discourse roles, i.e. the determinants of nounhood and verbhood are predominantly pragmatic (Hopper and Thompson 2004: 287) and coerced by syntagmatic relations. The actual proposal the authors make is that linguistic entities set out as acategorial elements, i.e.

> the continua which in principle begin with acategoriality, and which end with fully implemented nounhood or fully implemented verbhood, are already partly traversed for most forms. In other words, most forms begin with a propensity or predisposition to become Ns or Vs; and often this momentum can be reversed by only special morphology. It nonetheless remains true that this predisposition is only a latent one, which will not be manifested unless there is pressure from the discourse for this to occur (Hopper and Thompson 2004: 287).

In parallel to their suggestions it is plausible to assume that linguistic elements making up a CV set out as acategorial elements. When they are coerced by the dedicated constructional idiom it ascribes the whole a verbal categorial marking. The first constituent ambiguity is easily avoided if we accept the acategorial status of constituents.

Findings in psycho- and neuro-linguistic research gave Laudanna grounds to conclude that

> [l]inguistically based concepts articulated in terms of categories like "noun" and "verb" are supposed to be the epiphenomena of correlated clusters of elementary features. They are not thought to correspond to distinct cognitive representations; rather, they just mark different values of continuous variables like, for instance, perceptual features (Laudanna 2002: 6).

From a purely linguistic point of view, Rijkhoff argues that even "in languages that do have a more or less rigid distinction between verbs and nouns, members of both word classes can be analyzed in a similar fashion semantically" (2002: 141). Such arguments point to the plausibility of ascribing acategoriality to CV constituents and adopting semantic criteria for analyzing and classifying CVs. As far as English and Bulgarian CVs are concerned, first constituents never bear explicit morphological marking and have predominantly semantic contribution.

Furthermore, in support and even as an extension of Rijkhoff's contentions, Vogel (2000: 263) claims that Modern English has undergone a "degrammaticalization shift from a 'specialized' noun-verb language (with a grammaticalized part-of-speech system) towards a 'flexible' type-token language (without a grammaticalized part-of-speech system)." For the more conservative, Vogel suggests that English might be thought of as having two parallel part-of-speech systems: "Thus, there are now two overlapping systems: a specialized noun-verb-adjective-adverb-system and a flexible noun/verb/adjective-adverb-system" (ibid. 277). We claim that it is the flexible system that is utilized in compounding.

Table 5: Vogel's summary of the two part-of-speech systems in English

Specialised	V	N	Adj	Adv
Flexible	V/N/Adj			Adv

(Vogel 2000: 277).

Further evidence for the acategorial status of CV-internal constituents can be found in Farrell's (2001) contention that nominal/verbal construal is a matter of alternative profiling of underspecified symbolic units which are related via functional shifts. The lexical semantic representations of such words include event schemas that are compatible with either noun or verb meanings. The verb vs. noun aspect of the meanings is supplied by the morphosyntactic contexts in which they appear (Farrell 2001: 109). Thus it appears that in "thinking for speaking" (Slobin 2003: 158) a speaker has at their disposal alternative scenarios whose employment in a particular communicative event will depend exclusively on immediate situational variables and will be exceptionally pragmatically conditioned. Farrell's argument is couched in his analysis of conversion as a word-formation pattern. Within this model conversion from compound nouns no longer necessitates the functioning of the noun as an argument or semantic determinant of the newly formed verbs.

The acategoriality postulate may well capture the fluidity of conceptualization in the sense that on hearing a linguistic element a listener builds interpretative hypotheses which need not necessarily involve categorially marked treatment of constituents, even though there are marked tendencies as evidenced by the processing of garden-path sentences. But the fact that contradictions raised by garden-path sentences are resolved without much effort as they unfold indicates that categoriality marking is pragmatically superseded. Consequently, we might hypothesize that the constituents of CVs have phonetic shape, conceptual frame activation but no categorial marking. The acceptance of categorially undetermined constituents is beneficial not only for analyzing CVs in a unified manner, but seems like a probable line of research concerning the bracketing paradoxes of synthetic nominal compounds and provides for a functionally and pragmatically informed classification of CVs. From a methodological perspective, the acategorial treatment of constituents is fully justifiable in a constructionist theory because the constructions themselves have a significant contribution to specifying the properties of the linguistic items that realize them in particular instantiations.

5. Headedness and CVs

To add substance to our arguments we also need to consider how lexical categoriality of compound internal constituents in general and CV ones in particular interact with the headedness properties of compounds. Headedness remains a controversial issue in compounding even today. Scalise and Fábregas (2010) admit to the possibility of multiple heads in a single compound which is fully congruent with Scalise, Fábregas and Forza's (n.d.) parameterized treatment of exocentricity based on a three-fold understanding of head and headedness. The three types of exocentricity identified are categorial, morphological and semantic. The authors define categorial exocentricity as the case in which "the constituent in the head position does not impose its categorial features to the whole construction" (Scalise, Fábregas, Forza n.d.: 61).

A special case of categorial exocentricity is ACE (Absolute Categorial Exocentricity, cf. *pass-fail*) (for a summary of treatments of exocentricity and its role in CVs see Bagasheva 2011c). The authors define ACE as the phenomenon of the output being completely different from the input categories (ibid.: 55). Morphological exocentricity which is defined as the case in which "morphological features of the compound are not identical to the morphological features of any of its internal constituents" (ibid.: 62). In the view of the authors, this type of exocentricity is highly sensitive to type of language and the general theoretical framework adopted as regards the concept of morphological features. When operationalized as an analytical concept, semantic exocentricity is identified when

"the semantic type of the compound cannot be derived from the semantic type of any of its constituents" (ibid.).

In a similar vein, Scalise and Fábregas (2010: 124) contend that "[i]t could well be the case that inside a compound different elements can be identified as heads, depending on which features we are considering." We fully subscribe to the views of the authors expounded on above.

Thus for inflectional (i.e. categorial purposes) CVs in both English and Bulgarian are right-headed and inflections are marked compound-externally (e.g. *гласоподава_м_, гласоподава_ш_, гласоподава_хме_*, etc.; *has been pink-slipp_ed_, pink-slip_s_*, etc.). This uniformity is not a chance coincidence (despite the different morphological systems of the two languages), but the result of the regular process of constructional coercion which operates in CV creation.

The morphological understanding of headedness is not pertinent for CVs because it is difficult to trace the percolation of morphological features in CVs which arise from conversion or back-formation, not compounding proper, but still share all the properties of compound lexical objects.

The last type of headedness, semantic headedness, is particularly pertinent in the analysis of CVs. Scalise and Fábregas (2010: 121) propose to define a semantic head as "the constituent whose semantic contribution allows us to determine the class of objects denoted by the compound." In our view it is not any of the compound-internal constituents that determines the denotation of the CV, but the dedicated constructional idiom which determines the verbal profiling. Depending on the contribution of the input semantic frames, we can distinguish two general types of CVs – some in which the constituents contribute comparably by functioning as inputs to the CV frame configuring, and some in which the lexical meaning of the resulting CV is not directly dependent of the input frames as semantic contributors. Rather, the constructional idiom reinforces a conceptual reinterpretation congruent with the immediate context, later subject to a subsequent process of semantic drift or lexicalization via various linguistic and cognitive mechanisms.

To recap, the head in English and Bulgarian CVs is determined neither positionally nor morphologically, in keeping with Štekauer's onomasiological understanding of headedness. Rather, it is identified with an onomasiological base defined "as that constituent of the onomasiological structure which stands for the whole group or class of objects" (Štekauer 2005: 225). By implication, the onomasiological base is the most general constituent of the onomasiological structure. "The criterion of headedness is thus shifted to the *conceptual level* of the WF process" (ibid.). This is the only type of headedness whose analysis can help establish relevant distinctions in types of CVs. We assume that, morphologically and categorially, the dedicated CV constructional idiom, which coerces the verbal construal, functions as a categorial and morphological head, while the typology of CVs hinges on the nature of the semantic configuring executed.

6. An Alternative Classification of CVs

To replace the attributive, coordinate and subordinate classificatory model (which leads to unnatural disruptions of intra-niche unity), a new unified model based on the specific semantic configuring in CV subschemas is proposed. After all, "[t]he primary purpose of a good classification is to enable the linguist to make the best generalizations possible about linguistic phenomena" (Booij 2005: 110). The classification operates with scalar criteria and may be attacked for being vague. The strongest argument against such criticism is that the classificatory principle adopted (i.e. unity of linguistically relevant schemata and their dedicated constructional idioms which display hierarchical inheritance relations) tallies with intuitive users' knowledge and use of constructions and is not neatly tailored by and for the purposes of the analysts' theoretical constructs.

Most classifying systems are defined with a particular purpose in mind and work within an overall rationale. From the point of view of word-formation objects with a specific onomasiological function – to collapse the relation/conceptual core distinction and to both name and describe an event – CVs represent a unified class with numerous shared properties which make them distinct from all other compounds. The classification scheme proposed here tries to capture the lexico-semantic properties of CVs as word-formation products actualized as subschemas of a constructional idiom, directly utilized by speakers in their generation and by listeners in their interpretation.

The hypothesis put forward hinges on the application of two basic and closely interlinked criteria, both of which represent clines rather than discrete sets, in order to exhaustively and revealingly classify CVs in English. Both are semantic in nature, but while the first concerns the mechanism of internally configuring of their semantics, the second concerns the semantics of the lexically specified construction, i.e. the external semantics of CVs.

The first criterion employed relates to the internal constituency of CVs, where by constituency is understood the nature of the conceptual relation or configuring between the acategorial constituents – within the following two extremes: a) a relational property embedded within a relation (e.g. *force-feed, злословя*) and b) a thing embedded within a relation (e.g. *boyfriend-drop, гласоподавам*). Thus CVs subdivide into two subschemas which inherit the categorial properties of the constructional idiom and develop specific distinct properties associated with a different underlying conceptual operation of classification – superclassification and subclassification. Before we proceed with the specific suggestion, we need to make it clear that the type of classification referred to here is epistemological, with no implications intended whatsoever in relation to grammatical classification. In his *Verb Classification in Australian languages* McGregor (2002) draws the following distinction in operations of classification:

- grammatical classification: systems of overt or covert classification of lexemes; and
- epistemological classification: systems of linguistic units that categorise a domain of (conceptual) referents (McGregor 2002: 22).

So our metaclassification (the establishment of types of CVs) is based on the two distinct kinds of epistemological classification (i.e. categorization of referents) which CVs linguistically encode. The author himself argues for a distinction between superclassification and subclassification in the verbal lexicon.

> Certain noun-verb compounds in English (e.g. *hand-pick, pistol-whip, horse-whip, test-drive*, etc.) also represent a type of verbal subclassification: they specify subtypes of the event denoted by the verb. Gooniyandi, by contrast, shows a system of verb superclassification (McGregor 2002: 5).

As can be surmised from the suggestions of the author, certain CVs in English are instances of verbal subclassification, which might be taken to resemble the endocentric modifier type. The same applies to subdivisions in the Bulgarian CV lexicon. By implication it can be concluded that other CVs in English do not belong to the subclassifying type. The question as to what other class they might belong to remains to be discussed. Our working hypothesis is that the second class is an example of a superclassifying system creating new epistemological types of activities. Such a distinction is not paralleled by the simplex verbal lexicon where epistemological classification is uniform and is based on situation types (Rappaport, Doron, and Sihel 2010).

No parallel is intended here in any way between the phenomenon of verb classification (an object language phenomenon) and CV classification in English (a meta-language phenomenon), nor any implication of essential similarities between CV in English or Bulgarian and CVs in Australian languages. There are no distinct verb classes

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either in English or in Bulgarian[7]. McGregor's distinctions are used for the formulation of a hypothesis according to which we can draw an informative distinction between two groups of CVs – A and B. Group A members fit the definition of epistemological superclassification in which the CV does not specify a subtype of the event named by an associated simple verb (if there is such), but names a new semantic type of event (e.g. *dipsix*). Such verbs resemble McGregor's (2002: 5) description of superclassification in which verb classifiers indicate "to which [new] category the event belongs." Group B CVs closely resemble the verbs identified by McGregor (2002) as instances of subclassification.

Although McGregor "proposes that certain types of noun incorporation – specifically, Mithun's Type I lexical compounding and a subset of Type II manipulation of case (Mithun 1984) – involve verb subclassification" (McGregor 2002: 4), we would argue that a particular class of CVs in English represents an instance of epistemological superclassification. In analyzing the lexical semantics of *shoulder-surf* (which is defined by word spy as *to steal a computer password or access code by peeking over a person's shoulder while they type in the characters*) and *kitchen-sink* with its two meanings (according to word spy: a) *to announce all of a company's bad financial news at one time* and b) *when arguing or fighting with a partner, to complain not only about a recent problem, but also about numerous past problems*), it transpires that *shoulder-surfing* and *kitchen-sinking* are not subtypes of *surfing* and *sinking* respectively. Both verbs are undeniable instances of what has been identified as noun incorporation Type I lexical compounding, but neither is epistemologically a name for a subtype of the event named by the associated simplex verb. The analysis works for all CVs in Group A (even though not all of them are instances of Type I lexical compounding). These verbs are chosen as illustrative examples of the properties of Class A verbs for two basic reasons – they are recent creations, name socially significant activities, instantiate lexical compounding and no doubt involve complex metaphtonymic[8] processes of semantic change. Sticking for argument's sake to the Type I incorporation claim, and McGregor's supposition that these should be instances of subclassification, we would expect *kitchen-sinking* to name a subtype of *sinking*. *Sink* being associated with both transitive (causative) and intransitive uses, we would expect syntactic blocking to occur for the appearance of Type I incorporation. Blocking (if there is such) is superceded by naming needs that can be satisfied by the dedicated constructional idiom whose lexical specification in this instance leads to the lexicalization of a novel conceptual configuring, not specialization of the meaning of the "head" (which is presumed as a basic semantic operation in compounds, cf. Huddleston and Pullum 2002). Word spy defines the process of conceptual configuring of the verb thus,

> [t]his verb is based on the idiom *everything but the kitchen sink*, which hails from World War II. (Back then it referred to a heavy bombardment in which it appeared the enemy was firing *everything but the kitchen sink*.) The *verb is based on a sensible strategy*: If a company must divulge some bad news in its financial results, then it might as well bring all of its fiscal skeletons out of the accounting closet. The reasoning is that although the company's share price may drop a bit more than it otherwise would, it will drop far less than if the company announced each bit of bad news separately (word spy at http://www.wordspy.com/words/kitchen-sink.asp.; emphasis added).

As is obvious from the proposed semantic and cognitive motivation of the CV, what has lead the coiner to produce and use the lexical item are not morphosyntactic rules but a

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[7] The aspectual distinction and conjugation classes in Bulgarian are disregarded here as they apply equally to simplex, derived and compound verbs. The inticate mutual determinacy (if there is one) between derivation and conjugation classes fall outside the focus of the present argument.
[8] This term is used as defined by Goossens (2003). It is intended to indicate that metaphor and metonymy often work together in a symbiosis to back up human creativity in language use and understanding.

naming need to satisfy an instance of complex conceptual configuring based on metaphtonymic elaborations. There is metonymic mapping between *kitchen* and *destroying everything* (present in the initial idiomatic creation) and a set of metaphoric extensions tying up (the divulging of) *bad financial results* and *physical destruction*.

CVs in Group A create new individuated types of activities, i.e. names of socio-culturally significant activities (usually pragmatically primed); those in Group B receive such readings only on the basis of metonymic and metaphoric extensions,which leads to enhanced semantic exocentricity (e.g. the development of *spoon-feed* from a manner of feeding CV into one with an extended negatively marked sense of giving too much information or help to someone). The latter start off as more explicit descriptions of already named activities and end up as lexical items that have undergone semantic change.

Epistemologically speaking, Group B CVs can be interpreted as instances of subclassification manner verbs naming subtypes of the event named by a conceptually associated simplex verb, while Group A CVs name newly conceptualized events for which a conceptually associated simplex verb may not even exist and which represent emergent conceptual configuring.

The second criterion, semantic exocentricity, is understood to constitute a cline. The choice of the criterion is motivated by the recognition that "...exocentricity, even though it constitutes a sort of « anomaly » in language design, is nevertheless one of the defining properties of compounding phenomena" (Scalise and Guevara 2006: 185). Scalise and Guevara recognize the centrality of exocentricity in compounding and provide a definition not restricted to the "type of" requirement traditionally associated with endocentric compounds.

> Exocentricity is an « anomaly » in language design in the following sense: describing a construction as exocentric means acknowledging that we cannot account for all the information conveyed by it (ibid.)

To further specify our use of exocentricity as a classificatory criterion, we need to emphasize that we adopt Scalise et al.'s third dimension of exocentricity – semantic exocentricity, "in which the semantic class denoted by the compound cannot be predicted from the semantic class of their constituents" (Scalise et al. n.d.: 59-60).

According to this criterion CVs can be classified into a type whose semantics preserves the semantic predictability of the whole on the basis of the frames of the constituents (e.g. *bottle-feed*, *kick-start*, *ръкомахам, ръкопляскам, водоснабдявам*, etc.), while the second necessarily involve some kind of metaphtonymic transfer (e.g. *fast-talk*, *piggyback*, *ръкополагам, главоблъскам се*, etc.). Both Group A and Group B have the general potential to have semantically exocentric members. There are no restrictions concerning the metaphtonymy susceptibility of CVs. Only very general pragmatic constraints regulate the metaphtonymic elaborations of CVs. Furthermore exocentricity might be associated only with particular senses of a CV. It might even be the case that exocentricity is directly dependent of lexicalization, but such a claim is in need of further corroboration, which is beyond the scope of the present argument. The cline of semantic exocentricity supplements the two basic classes A and B.

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semantically		semantically
endocentric		exocentric
bottle-feed		*spoon-feed*
tumble-dry		*freeze-dry*
fox-hunt	*head-hunt*	*job-hunt*
ръкомахам	*ръкопляскам*	*ръкополагам*
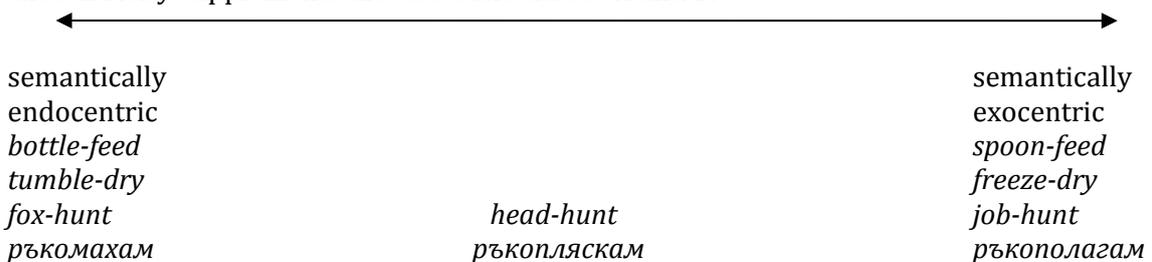
Figure 3: Niche-internal exocentric cline

The classification better captures the specificity of CVs in English and Bulgarian because it is able to accommodate the conceptual and lexico-semantic similarities among verbs, whose classification into the standard subordinate, attributive and coordinate types will lead to their classification in different categories (e.g. *stir-fry* and *deep-fry*, *drip-dry* and *rough-dry*). Considering the fact that most novel CVs arise as analogical constructions based on established exemplars, it is plausible to surmise that users rely more on lexico-semantic criteria than on morphosyntactic ones as every user relates to meaning but few are able to carry out the detailed linguistic analysis which underlies most classificatory schemes.

To replace classifications based on the lexical categoriality of compound constituents, or ones based on meaning generalizations stemming from the particular derivational processes, we can postulate construction-specific subschemas with unified semantics shaped by frame-based conceptual configuring:

Table 4: Three types of CVs

value-foregrounding (manner) (sub-classification)	*deep-fry, sun-dry, soft-land; злословя, благославям, ръкопляскам*
spatial scenario (sub-classification)	*overrate, undertake, outmaneuver; *задминавам*
metaphtonymic (super-classification)	*ear-mark, name-ambush, sandbag; самозабравям се, главоболя се, зловиди ми се*

Thus the CV lexicon of English and Bulgarian can be classified in a more comprehensive system which includes the general construction schema and its three specifications.

1. General schema of the constructional idiom: [X Y]V, where X stands for a compound-internal acategorial constituent and Y also stands for a compound-internal acategorial constituent, which are coerced into a relational concept by the constructional schema that sanctions them.

2. Group A: Super-classification CVs [X Y]V where the overall meaning of the CV involves the use of an initial situational interpretation which provides the onomasiological motivation for the CV: *to sandbag, to deadpan, to background; ръкополагам, словоблудствам* (slovobludstvam, 'word-abuse', "speak nonsense")*, боготворя* (bogotvorya, 'god-create', "worship").

3. Group B: Sub-classification CVs: [X V]V, which is subdivided into two groups on the basis of the lower-level schemas:

B_1. One level removed schema: [x v]v where v is not categorially specified within the construction, but is homonymous with a simplex verb, e.g. *to spray-paint, to spoon-feed, to headhunt*; *гласоподавам, водоснабдявам*

B_2. [SPATIAL SPECIFIER V]V – Marchand's genuine CVs: *to outnumber, to undergo, to oversee; подминавам*

Correlated with the 3 lower-level schemas, 3 different patterns of configuring can be postulated (which, for lack of space, will not be discussed in detail here, but see Bagasheva forthcoming):

I. A [X Y]V – configuring where the generic space is a newly emergent one in which the attribute values to be projected from the two input frames are selected in keeping with the graded salience hypothesis (Giora 1997, 2002; Huang 2009) and following pragmatically driven mapping principles (e.g. *railroad, piggyback, moonlight; ръкополагам, боготворя*).

II. B_1. [X F,D,P]V – configuring of the two frames where the first frame fills an available slot in the second one and foregrounds it, creating a new perspectivized profile of the second frame (e.g. *deep-fry, водоснабдявам*).

III. B_2. [SPATIAL SPECIFIER V]V – frame configuring where the two frames merge and the spatial specifier frame augments the second frame by embedding it in a spatial scenario

via the Location and Event branches of the Event Structure Metaphoric System. It has been argued that the prefixes in Bulgarian realizing this onomasiological need have core spatial meanings (Radeva 2007) and extended comparative meanings (Grozdanova 2005). They presuppose the existence of an implicit conceptual norm against which their specific lexical semantics can be appropriately interpreted. In view of grammaticalization theory (Heine et al. 1991) and the overall model of graded schematization (Langacker 2008) it might be claimed that the only difference between English spatial scenario "genuine" CVs and Bulgarian prefixed verbs is their degree of schematization (e.g. *overindulge, downgrade, преодолявам, преобръщам*). This leads to the following classificatory scheme:

[X Y]V: categorial specification or [+dynamic; +relational] categorial meaning

Group A [X Y]V   Group B [X V]V
[superclassification]   [subclassification]   - type of classification

[X Y]V   [X F,D,P]V   [SS V]V   - frame interaction
[emergent content]   [value foregrounding]   [spatial scenario]

deep-six   *bottle-feed*   *outfox*   - lexical meaning
ръкополагам   *електроснабдявам*   *надхитрям*
A B_1 B_2
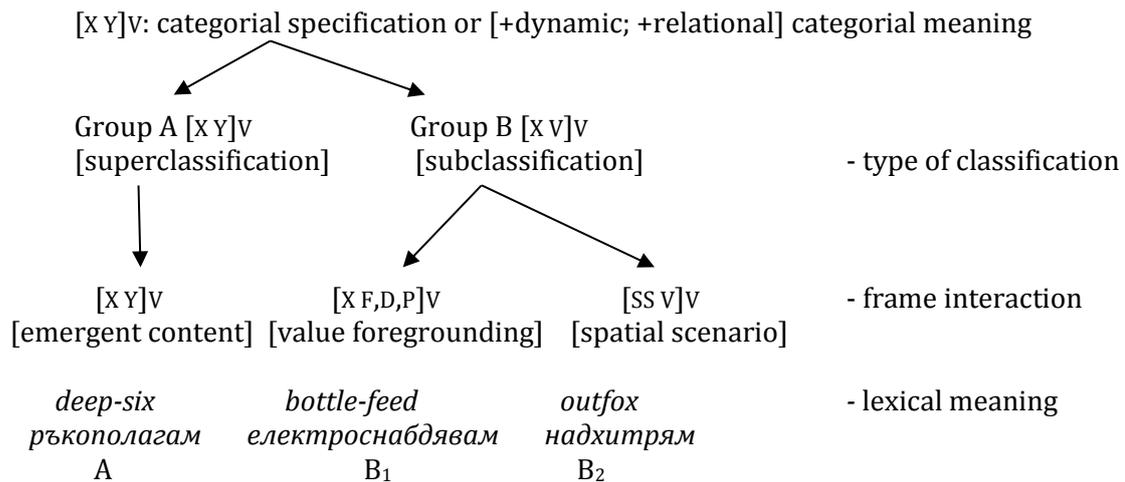
Figure 4: A diagrammatic representation of the semantic space of the CV lexicon

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The proposed classificatory system correlates with three identifiable mechanisms of frame interaction which uniformly apply to the members of the respective three subclasses. The elaboration and illustration of these claims will be the next step in this ongoing piece of research.

6. Concluding remarks

It appears from the potentially unlimited permissibility of the constructional idiom[9] that there are no morphosyntactic constraints that might preclude the lexical specification of the subschemas in any significant way. This is in keeping with the rising analytical tendencies in English and the severely undermined rigidity of its part-of-speech system. In Bulgarian the necessary aspectual marking of a V and the inflecting-fusional obligatory marking of part-of-speech membership (Manova 2005, Nitsolova 2008) seem to impose stricter constraints and to reduce the analogical potential of single CVs. In English, by contrast, the only constraint to be satisfied by CVs is the Conventional Frame constraint, as defined by Goldberg (2010: 50), "[f]or a situation to be labeled by a [*compound*] verb, the situation or experience may be hypothetical or historical and need not be directly experienced, but it is necessary that the situation or experience evoke a cultural unit that is familiar and relevant to those who use the word." There are no grammatical constraints in English for the appearance of novel CVs, arising via approximation (Rainer 2005: 23) to established local schemas.

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[9] The claim is based on the analysis of a self-compiled corpus of 460 CVs in English and 66 CVs in Bulgarian. The data for the corpus have been extracted from from CoCA, BNC, OALD 7th edition, OED on CD-Rom 2nd edition, dicitionary.com, urbandictionary.com, word spy.com, BulNC, the DBL and various research articles, works of fiction, occasional movies and TV series. For details see Bagasheva (forthcoming).

Studying compounds as usage events instantiating a constructional idiom helps better explain in a unified manner the properties of CVs. In both English and Bulgarian, CVs are consistently categorially and morphologically right-headed, but display wide variability in terms of semantic exocentrcity. The natural further step in this line of research will be to see how and if the proposed classificatory scheme for CVs can accommodate the properties of CVs in other (preferably typologically distinct) languages. It should also be supplemented by detailed analyses of the semantic mechanisms and patterns involved in the three types of configuring.

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