COMPOUND VERBS IN ENGLISH REVISITED

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Abstract: Compound verbs (CVs) raise a number of puzzling questions concerning their classification, their word formation properties, their basic onomasiological function and their transitory status between "relations" and "conceptual-cores". Using the constructionist framework in the context of a usage-based network model of language, the paper develops a proposal for the classification of CVs and an account of the semantics of word formation niches of CVs created by analogy, which yield unified semantic analyses. A hypothesis is formulated concerning the acategorial nature of CV internal constituents, which naturally accommodates the proposed classification and word formation niche analyses. A hypothesis is formulated in this context concerning the intermediary status of CVs as language-cognition interface units collapsing the "relation-conceptual core" distinction. Conclusions are drawn relating to the transitory nature of most CVs as nonce creations performing a special function in communicative interaction.

Keywords: compound verbs, acategorial constituents, classification of CVs, word formation niche semantics

1. Introduction

The present article feeds on two basic premises. First, the study of compound verbs (CVs) is long overdue. As Guevara and Scalise remark (2009: 125),

> It is remarkable that the literature has dedicated a great deal of attention to just one case in compounding […] that is: endocentric subordinate right-headed [N+N]N compounds. While this pattern is certainly the canonical instance in compounding in the world's languages, it is by no means the only one. Future work on the typology and on the theory of compounding will necessarily have to shift the tendency shown until now by concentrating on the analysis of the many remaining compound-types.

Second the status of CVs in terms of their complex semantics and their intermediary status between "relations" and "conceptual cores[1]" as basic types of

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[1] The terms are used as defined by Radden and Dirven (2007). Even though the authors use them to distinguish between verbs and their clausal elaborations, the terms adequately capture the distinction between a simplex verb and a compound verb as argued and illustrated in Sections 4.

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interface units between language and cognition poses challenging questions about the external and internal semantics of CVs.

A terminological clarification is in order here - for the purposes of the subsequent discussion by compound verb (CV) is understood a compound which irrespective of its derivational pattern (i.e. composition, back-formation, or conversion) has as its core meaning a verbal meaning and can be used in all finite forms.

Studies of compounding are not the only area of linguistic investigations which do not grant verbs (and compound verbs in particular) their due center-stage position. Psycholinguistic research on compounds is focused exclusively on nominal compounds; neurolinguistic research is also focused predominantly on the processing of other categories. "The absence of neuro-linguistic studies specifically concerning verbs semantics can be due, at least in part, to the 'puzzling' nature of verbs" (Finocchiaro 2000: 226). In a like manner the lack of sufficient research devoted to compound verbs in the overwhelming body of literature may, in part, be due to the even more puzzling nature of CVs.

Whatever the reasons for this state are, CVs have recently dog-trotted their way into linguistic discourses. Widening Wald and Besserman's (2002: 417) argument for VV compounds as "a unified and productive construction [which] posed an interesting set of problems and challenges for twentieth century and later historical and synchronic linguistics", the present paper discusses questions concerning the classification, status and semantics of CVs in English.

The considerable scarcity of research on CVs may be accounted for by the tacit assumption that what applies to synthetic endocentric nominal compounds (at least in English) applies by implication to compound verbs. Such an assumption is however if not wrong-footed, at least unwarranted as can be seen from psycholinguistic research on the processing and representation of compounds, the neurolinguistic evidence indicating strict dissociations between nouns and verbs and research within cognitive linguistics which points towards a basic conceptual distinction between the profiling capacities of symbolic complexes surfacing as nouns and those surfacing as verbs (Cappa and Perani 2002, Laudanna 2002, etc.). The dissociations identified relate to the overall categorial marking of a simplex lexeme and does not bear implications concerning the status of constituents of compounds. Moreover, as put by Cappa and Perani (2002: 79), the processing dissociations do not necessarily indicate linguistically relevant categorial marking:

> Taken together, the available evidence leads to the conclusion that there is consistent evidence for the existence of different cerebral correlates for the processing of object nouns and action verbs. Whether it is possible to consider this result as a "grammatical class" effect remains however an open question.

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Among the problems of compounds and compounding[2] (including CVs) which are still at the center of ongoing debates, we find: the interpretation of compounds as syntactic or morphological objects (Bisetto and Scalise 1999; Neeleman and Ackema 2004, etc.); their properties as lexicalized objects or as the products of fully productive morphology, i.e. are they lexicalized items or morphological objects? (Gaeta and Ricca 2009); issues over their headedness, be it as a unified concept or as a parameterized one (Lieber 2004, Scalise and Guevara 2006, Scalise et al. 2009, etc.); the nature of their basic onomasiological function – naming or descriptive; the nature of their processing as on situ computation online or as retrieval of stored ready-made lexical units (Libben and Jarema 2006); the nature of their internal semantics in terms of compositionality (Benzces 2006, Bundgaard, Ostergaard and Stjernfelt 2006 and 2007); the status of their constituents as words or roots/stems or something else entirely (Trask 1999, Bauer 2005).

No less problematic is the analysis of the word formation processes involved in the creation of CVs. Are they to be considered coinages resulting from conversion interpreted as re-listing (Lieber 2004), as interpretable only as diachronically accountable backformations or as productive analogical compositions proper, in which it is possible to accommodate VVs whose diachronic establishment has evolved from back formations to a fully productive synchronic VV pattern is strongly argued for by Wald and Besserman (2002)?

2. Scope, methodology and data

The present article does not span as widely as to cover all the questions and problems identified above. It is focused on the classification, word formation properties and conceptual status of CVs, with an accompanying discussion of the nature of the constituents of CVs.

Besides the first two introductory sections, the body of the paper contains three sections, each of which is narrowed to a local research question. In the third section a hypothesis is put forward that if we accept the constituents of CVs as acategorial linguistic entities we would be able to formulate classificatory unification of CVs and achieve analytical unification in analyzing their semantics in terms of word formation niches. The concept of the word formation niche and the unified semantic analysis of its members are expounded on in section four. It also contains a brief discussion of CVs as interface unities collapsing "conceptual

[2] The last two are not identical – many compound verbs are assumed to result from backformation or conversion, while the controversy between the phrase/compound sequencing in root nominal compounds (and not only) undermines the uniform interpretation of compounding.

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cores" as "relations" cores in the cognitive grammar of English. In the fifth section the emphasis falls on drawing conclusions taking into account all the hypotheses formulated earlier in which CVs are interpreted as lexical items largely constructed by analogy in a fully productive manner realizing direct compounding.

The approach is based on a synchronic dynamic view of language contextualized in the usage-based network model of language (Tomasello 2005, Bybee 2010). The argumentation is couched into largely overlapping theoretical frameworks – cognitive linguistics (including cognitive semantics – Langacker 1987, Croft and Cruse 2004, Evans 2007, Langacker 2008, Evans 2009, Bybee 2010), frame semantics (Fillmore 1985, Barsalou 1992, Goldberg n.d., etc.) and construction morphology (Goldberg 1995, Booij 2005, Goldberg 2006, Booij 2007, Massini 2009, Booij 2010). The basic postulates and terms taken from the respective frameworks concern the understanding of the construction as a unit of analysis applicable at word level, the nature of schemas and the principles of linguistically encoding conceptualizations of events (scenes):

> the grammar represents an inventory of form-meaning-function complexes, in which words are distinguished from grammatical constructions only with regard to their internal complexity. The inventory of constructions is not unstructured; it is more like a map than a shopping list. Elements in this inventory are related through inheritance hierarchies, containing more or less general patterns (Michaelis and Lambrecht 1996: 216).

Thus CVs are analyzed as constructional idioms with emergent semantics and acategorial constituents.

The analysis is based on a self-compiled corpus of numerous CVs, only a sample of which are directly analyzed or mentioned in the paper. The appendix contains a representative sample of CVs. The data in the corpus are extracted from *Oxford Advanced Learner's Dictionary*, *Oxford English Dictionary*, *Random House Dictionary*, *The American Heritage® Dictionary of the English Language*, dictionary.com, urbandictionary.com, BNC, FrameNet, WordNet, and various research articles. The analysis is qualitative.

3. Classification of CVs

3.1 Classifications of compounds and the place of CVs within them

The ample literature on compound classification (Fabb 1998, Bauer 2001, Haspelmath 2002, Booij 2005, Bisetto and Scalise 2009) does not provide specific

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criteria for the classification of CVs and generally represents a heterogeneous set of classificatory systems, in which besides the terminological confusion, a mixture of incompatible criteria are used. The basic criteria traditionally adopted for the classification of compounds include headedness, nature of the relationship between the constituents, internal semantics, categorial labels of the head constituent, etc. (see Bisetto and Scalise 2009 for a detailed presentation and analysis of available classificatory systems and the criteria they adopt).

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*); Particle + Verb (e.g. *overachieve*); Adjective + Noun (e.g. *bad-mouth*) and Noun + Noun (e.g. *breath-test*)". This form-based structural classification is supplemented by in-group specifications of "method of formation". Thus the heterogeneous class of CVs is ordered into sets on the basis of an explicit assumption that the constituents of a CV have well-specified part-of-speech categorial marking, no matter what the exact "method of formation" is in each case.

In another explicit classification of CVs, narrowed to one of Bauer's classes (VV), Shibatani (1990: 246) suggests the following classifying scheme:

(i) modifier-V – where the modifier names the manner of the activity named by the second verb;
(ii) V-modifier – where the second constituent identifies the manner or direction of the verb;
(iii) V-V – where both verbs have equal semantic contribution to the semantics of the whole, naming a complex event.

As the classification is proposed in relation to discussing the nature of Japanese VVs, it is not supposed to naturally apply to CVs in English. The second type V-modifier is not characteristic of English, but the first and third types are attested. The distinction between these two types resembles the distinction between *stir-fry* and *tap-dance*. The former is classified as 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. As the VV category is a recent development in the productive word formation inventory of English, not many people have discussed at length the nature of this pattern (Hall 1956, Pennanen 1966, Marchand 1969, Selkirk 1982, Bauer 1983, Wald and Besserman 2002). In Bauer's (1983: 208) commentary of VVs the basic property of the type

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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. The 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 (2002: 417) state that

> Concerns 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.

The authors do not 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 suggest that a uniform synchronic analysis is possible if we take into account the activity constraint.[3] 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 (see 3.2). No matter what position one takes over the N/VV constituency, it becomes clear that VVs have emerged in modern English as a productive synchronic pattern. This only makes the need to establish the nature of the overall category of CVs in English more pressing.

Our discussion of CVs classification cannot proceed without a comment concerning a central work relating to verb classification, and more specifically to CV classification – McGregor (2002). In the context of drawing parallels and contrasts between noun and verb classifications, the author postulates a difference between classes and categories based on the types of relations among the members thereof and argues for a distinction between superclassification and subclassification.

> 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).

A further discontinuity is defined between (McGregor 2002: 22):

(i) grammatical classification: systems of overt or covert classification of lexemes; and

[3] For the details of their argumentation see Wald and Besserman 2002).

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(ii) epistemological classification: systems of linguistic units that categorise a domain of (conceptual) referents.

As can be surmised from the suggestions of the author, certain CVs in English are instances of verbal subclassification, resembling the endocentric modifier nominal type. 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 remains to be discussed. As will be argued in 3.3., CVs in English can be viewed from the perspective of epistemological classification and two classes with distinct internal and external semantic properties can be established.

The 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, e.g. *coffee pot*, *tea towel*, and synthetic compounds to CVs we run into serious problems. According to Bisetto and Scalise (2009), this dissociation 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. Bisetto and Scalise's (2009) classificatory system, which recognizes coordinate, attributive and subordinate compound types with exo- and endocentric variants, avoids 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.

Lieber (2009: 359), adopting the latter's classification scheme, 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". In two subsequent tables summarizing in a theory-neutral manner the types of compounds characteristic of English[4] as an IE, Germanic language, the author classifies *stir-fry* as a simultaneous endocentric coordinate compound and *headhunt*, *machine-wash* and *spoon-feed* as "endocentric verb-containing subordinate compounds of the output category V" (Lieber 2009: 360-361) and dubs these "a marginal class" (Lieber 2009: 361).

[4] Lieber (2009) uses the classifying system of compounds introduced by Bisetto and Scalise (2009) with a slight broadening of the subordinate class to include ones with subject-oriented interpretations.

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On the surface the adoption of Bisetto and Scalise'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. Exocentricity is not recognized as operative in the CV lexicon by Lieber (2009: 360-361, tables 18.1. and 18.2).

As is obvious from Lieber's (2009) classification of CVs in English (see above), finer subdivisions in the specified endocentric and exocentric subgroups can be established, which relate to the simultaneity[5] 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 non-verbal constituent in a CV. The simultaneity/consecutiveness distinction is applicable only in cases in which we recognize a VV compound, which would all, according to the higher distinguishing property, be classified as coordinate. Are we to assume that there are grounds for postulating a classificatory dissociation between *deep-fry* and *stir-fry*, on the basis of the categorial marking of the first constituents? Is the cross-classification between *stir-fry* and *machine-wash* (the former classified as coordinate simultaneous compound and the latter as subordinate V containing a V, see Lieber 2009) justifiable on the basis of interpreting the first constituent as noun in the first case vs. as a verb in the second one? Is such a classification justifiable in view of the close association in the conceptual and lexical semantic properties of the two verbs? Are such dissociations justifiable in view of the construction-based inheritance hierarchies identifiable within the CV stock of the lexicon distinguishable only in terms of degree of schematicity (alternatively lexical specification of a constituent)? Does this pay justice to the unified semantics of the niches the two verbs belong to?

We argue that the dissociations stem from an implicit adoption of a category-specific interpretation of the first (not only) constituent in CVs – if *stir-fry* is coordinate simultaneous compound it should be treated as quite distinct from *deep-fry*, *deep fat-fry*, *French fry*, etc. But these 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 constitute a well-established word formation niche, which in our view has unified

[5] Renner (2008: 611) elaborates a semantic classification of VVs: "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*.

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semantics (to be discussed in section 4). We assume that suspending the categoriality of constituents might lead to interesting results concerning the classification of CVs. The question is whether we have any reason to allow for acategoriality of CV internal constituents?

3. 2 Categorial indeterminacy of CV constituents

For many speakers of European languages the semantic, syntactic and formal distinctions between nouns and verbs correlate unequivocally with the way they experience the world. As Laudanna (2002: 3, emphasis added) observes:

> First 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.

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

This general noun/verb indeterminacy (see the constituent controversy in 3.1.) is aggravated in discussions of compounds as they have at least two constituents and the status of the latter as lexemes or root/stems has not been unambiguously settled. Bauer's (2001: 695, emphasis added) idea of formal isolation as a basic criterion for compoundhood is open to interpretations and allows for 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*.

The possibility, not necessity of lexemehood and the stipulation for grammatical isolation from normal syntactic usage allow for postulating categorial indeterminacy of CV constituents. Without explicitly or totally

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dismissing the relevance of lexical categoriality of CV constituents, Bauer opens the way for relaxing the N/V debate in relation to CV constituency.

Another implicit allowance for such an approach can be traced back to the early 1990s:

> 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. As early as 1984 Hopper and Thompson (1984/2004) put forward the hypothesis about the categorial indeterminacy of parts-of-speech in discourse. 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 1984/2004: 287) Suffice it to say that prototypical verbs introduce events in discourse. The concluding proposal Hopper and Thompson (1984/2004: 287) make is that linguistic entities set out as acategorial elements:

> 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.

In parallel to their suggestions it is plausible to assume that linguistic elements making up a CV set out as acategorial elements and jointly ascribe categorial marking to the construction idiom, the whole complex receiving a unified categorial specification in which the unique sub-lexical, construction-internal conceptual relations can be realized. The first constituent ambiguity is easily avoided if we accept the acategorial status of constituents (both or all of them).

Psycho- and neuro-linguistic evidence drove Laudanna (2002: 6) to contend:

> Linguistically 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

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distinct cognitive representations; rather, they just mark different values of continuous variables like, for instance, perceptual features.

From a purely linguistic point of view, Rijkhoff (2002: 141) 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". Such arguments point to the plausibility of ascribing acategoriality to CV constituents. As far as English CVs are concerned, first constituents never bare explicit morphological marking and have predominantly semantic contribution.

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 categorically 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 (see section 4), 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, 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.

3. 3 Classification of CVs

Most classifying systems are defined with a particular purpose in mind and work within an overall rationale. From the point of view 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 perceived as constructions.

The hypothesis put forward necessitates that we apply two basic but closely interlinked criteria, both of which represent clines rather than discrete sets, in

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order to exhaustively and revealingly classify CVs in English. Both are semantic in nature, but while the first concerns the internal semantics, the second concerns the semantics of the lexically specified construction, i.e. the external semantics of CVs.

A few preliminary clarifications are in order before we expound on the criteria and the resulting classification. Building on Gucht et al.'s (2007: 747-748) discussion of instrumental and autosemantic meaning characterizing different types of lexemes, we would like to suggest that verbs come closer to the "instrumentality" semantics identified for prepositions. Instrumental meanings are defined by Gucht et al. (2007) as purely relational. If we conceive of a cline of inherent semantics, then verbs will be positioned next to prepositions towards the instrumental extreme as verbs combine relational and "conceptually self-contained lexical meanings" (Gucht et al. 2007: 748). The different positioning of CVs is intended to capture the elaboration of the conceptually self-contained meanings:

(1) autosemantic----------fully instrumental
nouns compound verbs verbs prepositions

Radden and Dirven (2007: 41) in discussing the ways in which "units of thought relate to language" claim that we do not need "more than two basic types of conceptual units: things and relations" in order to establish linguistically relevant conceptual distinctions. Going a step further, we argue that CVs are more than just "relations" because they profile "conceptual cores" which combine "things" and "relations" into conceptual wholes. Used as predicates, CVs can be projected as valency slots to more "things" that can be attached to create more complex "conceptual cores". Thus CVs surface in the symbolic inventory of language as reduced or compressed "conceptual cores". As such CVs resemble the description of a compressed "conceptual core", but are actualized in discourse as naming new "relations". In terms of conceptual content they come closer to scripts, e.g. *headhunt*, *name ambush*, etc. – Group A (see Appendix) rather than to frames, e.g. *stir-fry*, *rough-dry*, etc. – Group B (see Appendix). The frame-script distinction covers a gradient space which correlates with the gradient space enclosed between the two groups of CVs suggested below.

With these clarifications in mind, we are now equipped to develop the proposed classifying scheme. The first criterion employed relates to the internal constituency of CVs, where by constituency is understood the nature of the conceptual relation between the acategorial constituents – within the following two extremes: (i) a relational property embedded within a relation, e.g. *force-feed*, and (ii) a thing embedded within a relation, e.g. *boyfriend-drop*. According to this criterion, in parallel to the syntax of English, CVs which cluster around the

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extremes of the cline fall into two large groups: Group A whose internal conceptual makeup resembles clause-like argument realization, e.g. *apartment-hunt*, *name-ambush*, etc., and Group B whose internal conceptual makeup resembles adverbial-like modification, e.g. *rough-dry*, *deep-fry*, etc. The middle region is occupied by CVs in which there is ambiguity in the thing/relation conceptual profiling and whose internal analyzability is reduced to a minimum, e.g. *guest-conduct*, *sandbag*, *blackball*, *deadpan*, etc.

CVs in Group A create new individuated types of activities, i.e. names of socio-culturally significant activities (usually pragmatically primed), the ones 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* and *force-feed* in relation to the senses of providing information/opinions or of *piggyback* with the meaning of advertising two products in the same commercial. The latter start off as more explicit descriptions of already named activities and end up as lexical items that have undergone semantic change[6] – an illustration of such developments is the process of sense-extensions of *piggyback* from a sense naming a manner of locomotion (or should it better be of carrying) to a sense naming advertising tactics of promoting two or more products together in the same commercial (as defined by dictionary.com).

The second criterion is also understood to constitute a cline – one of semantic exocentricity. The choice of the criterion is motivated by the recognition (Scalise and Guevara 2006: 185) 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), not only recognize the centrality of exocentricity in compounding, but also provide a general 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.

To be even more specific, the criterion of semantic exocentricity adopted here is to be understood as defined by Scalise et al. (2009: 59-60):

> We will refer to this third sense of exocentricity, in which the semantic class denoted by the compound cannot be predicted from the semantic class of their constituents, as semantic exocentricity.

[6] The processes and mechanisms of semantic change involved are succinctly summarized in Bybee (2010, ch. 1 to 3).

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According to this criterion CVs can be classified into ones whose semantics preserves the semantic predictability of the whole on the basis of the frames of the constituents, e.g. *bottle-feed*, *kick-start*, etc., while the second necessarily involve some kind of metaphtonymic[7] transfer, e.g. *fast-talk*, *piggyback*, 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.

Before illustrating how the arguments for acategoriality of constituents, the suggested classification and the concept of exocentricity collapse together in accounting for word formation niches in the CV lexicon (see next section), a comment is in order here on how the proposed classification scheme correlates with another much more deeply elaborated classification scheme.

Group B CVs closely resemble the verbs identified by McGregor (2002) as instances of subclassification (see 3.1. above). Group A resembles his description of superclassification in which verb classifiers indicate "to which category the event belongs" (McGregor 2002: 5). 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 and compound verbs in Australian languages. A hypothesis is formulated according to which Group A members fit the definition of epistemological superclassification in which the CV does not specify a subtype of the event named by the simple verb, but names a new semantic type of event.

Although McGregor (2002: 4) "proposes that certain types of noun incorporation – specifically, Mithun's Type I lexical compounding and a subset of Type II manipulation of case […] involve verb subclassification", we would argue that Type I lexical compounding in English represents an instance of epistemological superclassification. In analyzing the lexical semantics of *boyfriend-drop* and *name-ambush*, it transpires that *boyfriend-dropping* and *name-ambushing* are not subtypes of dropping and ambushing respectively. The analysis works for all CVs in Group A, but these verbs are chosen for two basic reasons – they are recent creations, name socially significant activities and no doubt can be cast on their word formation pattern – composition proper. Sticking for argument's sake to the Type I incorporation claim, and McGregor's

[7] 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. Their ordered operations in creative compounding have been extensively studied by Benczes (2006) and their sequencing in the interpretation of semantically exocentric compound verbs is highly pertinent but beyond the scope of the present paper which is a preliminary study of the nature, status and analysis of CVs.

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supposition that these should be instances of subclassification, we would expect *boyfriend dropping* to name a subtype of dropping. *Drop* being a highly polysemyous verb, we have to identify the relevant sense which *boyfriend dropping* might be a subtype of. Among the meanings listed in *Oxford English Dictionary*, the one that relates to verbal behaviour is "15. a. TO LET FALL (WORDS, A HINT, ETC.); TO UTTER CASUALLY OR BY THE WAY. Also with obj. clause."

But one cannot utter or let fall a boyfriend in a conversation. The lexical semantic meaning of the CV involves a whole script – IN A CONVERSATION A GIRL MENTIONS THAT SHE HAS A BOYFRIEND IN ORDER TO DETER ANYONE WHO IS POTENTIALLY INTERESTED. Thus the development of the specific sense cannot be interpreted as semantic specialization or narrowing of meaning as in the original sense of *drop* the object can be a general noun describing a type of verbal behaviour or unit (word, a hint, etc.). The lexical semantics of the CV contains the content of the utterance, which is not the case with the objects of the original *drop* verb.

In *name ambush* it is even more difficult to establish a sense of the simplex verb *ambush* which might lead us to the meaning of the CV which again describes a whole script of social interaction - THE SITUATION WHEN AN ACQUAINTANCE YOU HAVEN'T SEEN FOR A LONG TIME GREETS YOU BY NAME BUT YOU DON'T HAVE TIME TO REMEMBER THEIR NAME.

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 simplex verb. Thus it is plausible to conclude that, epistemologically speaking, Group B CVs can be interpreted as instances of subclassification and most are manner verbs naming subtypes of the event named by a conceptually associated simplex verb, while Group A CVs name events for which a conceptually associated simplex verb may not even exist.

The classification captures better the specificity of CVs in English 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 CVs arise as analogical constructions, 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 detailed linguistic analysis which underlies most classificatory schemes.

The classification operates with scalar criteria and may be attacked for being vague. The strongest argument against such criticism is that it tallies with intuitive users' knowledge of constructions and is not neatly tailored by and for analysts' theoretical constructs.

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4. The semantics of word formation niches

On hearing a linguistic element a listener builds interpretative hypotheses which need not be necessarily categorially marked even though there are marked tendencies as evidenced by the processing of garden-path sentences. The constituents have phonetic shape, conceptual frame activation but no categorial marking. They constitute a constructional idiom (in the sense of Jackendoff 2002), which realizes a construction schema in which one or more slots (but not all of them) are lexically fixed.

The construction schema (Langacker 1987, Booij 2005, Tuggy 2005a and 2005b, Booij 2007, Langacker 2008, Booij 2009 and 2010, Bybee 2010, Lampert and Lampert 2010) is "a cognitive representation comprising a generalization over perceived similarities among instances of usage" resulting from "repeated activation of a set of co-occurring properties" (Barlow and Kemmer 2000: xxiii). In the rich pragmatic context in which the listener perceives a CV (be it also a novel one), they are able to construe an overall meaning without necessarily analyzing the CV into its constituents. Thus building on a source exemplar both speakers and listeners arrive at analogical extensions which share a number of properties, the most conspicuous of which is semantic similarity. In this way word formation niches or families are created:

(2)
(A) the *whip* family: *horsewhip*, *pistol-whip*, *pussy-whip*
(B) the *cook* family: *steam-cook*, *oven-cook*, *pressure-cook*
(C) the *start* family: *tow-start*, *kick-start*, *jump-start*
(D) the *feed* family: *breast-feed*, *force-feed*, *spoon-feed*, *bottle-feed*, *hand-feed*, etc.
(E) the *dry* family: *drip-dry*, *tumble-dry*, *rough-dry*, *smoke-dry*, *freeze-dry*, etc.
(F) the *talk* family: *sweet-talk*, *smooth-talk*, *double-talk*, *small-talk*, *fast-talk*
(G) the *land* family: *crash-land*, *rough-land*, *soft-land*
(H) the *foot* family: *hotfoot*, *cat-foot*, *pussy-foot*, etc.
(I) the *fry* family: *deep-fry*, *French-fry*, *deep fat-fry*, *stir-fry*
(J) the *sit* family: *baby-sit*, *housesit*
(K) the *hunt* family: *headhunt*, *apartment-hunt*
(L) the chain family: *chain-smoke*, *chain-drink*, *chain-react*

The portion of the lexicon containing CVs can be described through an inheritance hierarchy of construction idioms (as defined by Masini 2009) at different levels of schematicity:

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(3) [[P] Xi, j, k [R] V] Vl, m, n → [to *do*/*process* something *with*/*to* a certain effect by exploiting SEMi, j, k effect], where:
X = the semantics of lexical-like acategorial epiphenomenal congregations of conceptual attributes;
P and R = sound sequences;
j, k, m = semantic features or dimensions in conceptual space which are activated in shaping the conceptual content of the CV.

Pursuing this line of analysis, leads to recognizing that when viewed as word formation objects CVs in English tend to group into natural word formation niches. Hüning (2009: 183) claims that

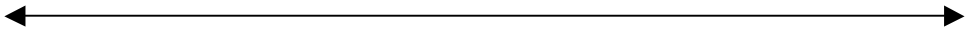
> word formation processes often show semantic fragmentation: in the course of time they develop 'semantic niches', i.e. groups of words (subsets of a morphological category) kept together by formal and semantic criteria and extendable via analogy.

Such an interpretation dovetails nicely with the unified interpretation of word formation niches as displaying a single semantic pattern schematized in a construction with only one constituent being lexically determined [MANNER *dry*] [MANNER *fry*] [MANNER *feed*]. The schema for (E) the *-dry* family: *tumble-dry, sundry, kilndry, spin-dry, drip-dry, blow-dry, rough-dry, freeze-dry, air-dry, smoke-dry, and spray-dry* is:

(4) X-*dry*: [[P] Xi, j, k [dry]] V → [to *dry/bring something to a dried state* by exploiting SEMi, j, k effect/possibilities].

An analysis of the lexico-semantic features of the niche-internal members reveals that each niche constitutes a cline of exocentricity. In the *-dry* family it can be observed in the development of the "processing" feature from drying to treating clothes in a certain manner (*rough-dry*) to treating other entities for certain purposes (*smoke-dry*):

(5)



endocentric		exocentric
drip-dry	*rough-dry*	*smoke-dry*
sundry		*freeze-dry*

(6) *drip-dry*
1. (INTR.) (OF A CLOTH ITEM) TO DRY INTO A DESIRED FORM AND SHAPE WHEN HUNG DRIPPING WET AFTER WASHING;

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2. (TR.) TO HANG (A CLOTH ITEM) AFTER WASHING WHILE IT IS DRIPPING WET AND ALLOW IT TO DRY, ESP. IN ANTICIPATION OF ITS ASSUMING ITS DESIRED FORM AND SHAPE DURING THE DRYING PROCESS.

(7) *rough-dry* - TO DRY (LAUNDRY) AFTER WASHING, WITHOUT SMOOTHING, IRONING, ETC.

(8) *smoke-dry* - TO DRY OR CURE (MEAT OR OTHER FOOD) USING SMOKE.

If we apply the subordinate, coordinate and attributive classificatory scheme (which is based on clear categorial distinctions of the constituents) *drip-dry* would be classified as coordinate simultaneous one, while *rough-dry* would be an endocentric subordinate one. If we apply the classification suggested in 3.3. above, the CVs will be rendered constituents of a uniform class, which also tallies with the overall semantics of the word formation niche both CVs belong to. They belong to Group B and display different degrees of exocentricity. What is more, the criterion we used for overall classification appears to be active among niche-internal analogical extensions.

In (D) the *-feed* family the degree of semantic exocentricity is even more perceptible, from *hand-feed*, which has only endocentric senses to *spoon-feed*, which has developed two distinct exocentric senses:

(9) *hand-feed*

1. (Agriculture) TO FEED (ANIMALS) WITH APPORTIONED AMOUNTS AT REGULAR INTERVALS;

2. TO FEED (AN ANIMAL OR PERSON) BY HAND. (*Random House Dictionary*)

(10) *bottle-feed*

1. TO NURSE OR FEED (AN INFANT OR YOUNG ANIMAL) WITH MILK OR OTHER NOURISHMENT FROM A NURSING BOTTLE;

2. TO NURTURE OR TEACH WITH EXAGGERATED CARE.(*Random House Dictionary*)

(11) *force-feed*

1. TO COMPEL TO TAKE FOOD, ESPECIALLY BY MEANS OF A TUBE INSERTED INTO THE THROAT;

2. TO COMPEL TO ABSORB OR ASSIMILATE. (*Random House Dictionary*)

(12) *spoon-feed*

1. TO FEED WITH A SPOON;

2. TO OVERINDULGE OR SPOIL;

3. TO PROVIDE (A PERSON) WITH READY-MADE OPINIONS, JUDGEMENT, ETC., DEPRIVING HIM OF ORIGINAL THOUGHT OR ACTION. (*Random House Dictionary*)

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The cline of exocentricity along which niche-internal members can be arranged operates in niches of CVs from both Group A[8] and Group B, as well as for members occupying the middle ground between clear Group A and clear Group B, e.g. *blackball*, *blackmail*, *graymail*, *sandbag*, etc.

Headhunt and *apartment-hunt* from Group A differ in degree of exocentricity. While *apartment-hunt* retains the SEARCH and TRY TO CATCH features, *head-hunt* has developed an unpredictable sense:

(13) *headhunt*
TO FIND SB WHO IS SUITABLE FOR A SENIOR JOB AND PERSUADE THEM TO LEAVE THEIR PRESENT JOB (*Oxford Advanced Learner's Dictionary*).

Sandbag from the middle of the cline between Group A and Group B has both endocentric and exocentric senses, while *pink-slip* has only an endocentric sense:

(14) *sandbag*
1.TO FURNISH WITH SANDBAGS;
2. TO HIT OR STUN WITH A SANDBAG.
INFORMAL:
A. TO SET UPON VIOLENTLY; ATTACK FROM OR AS IF FROM AMBUSH;
B. TO COERCE OR INTIMIDATE, AS BY THREATS;
C. TO THWART OR CAUSE TO FAIL OR BE REJECTED, ESPECIALLY SURREPTITIOUSLY OR WITHOUT WARNING;
3. (POKER) TO DECEIVE (ONE OR MORE OPPONENTS) INTO REMAINING IN THE POT BY REFRAINING FROM BETTING ON A STRONG HAND, THEN RAISING THE BET IN A LATER ROUND. (*Random House Dictionary*)

(15) *pink-slip*
TO DISMISS FROM A JOB. (*Random House Dictionary*)

Despite the similarities between the two groups (A and B) in relation to exocentricity, they seem never to crisscross. This fact is explainable in view of Audring and Booij's (2007: 154) constructional licensing: "the occurrence of words with a particular meaning appeared to be licensed by specific morphological and/or syntactic configurations". This constraint rightly predicts that in analogical extensions of CVs the overall semantic type of the word

[8] There are interesting correlations between verbs form Group B and their greater analogical potential (respectively well-elaborated niches) and the greater idiosyncrasies observed in verbs from Group A and their lower to zero productivity in terms of analogical elaborations, but these facts deserve more detailed research which is beyond the scope of the present article.

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formation product will be preserved. It is unlikely to expect additions to the *-dry* family of the type **shirt-dry* or **dress-dry*, just as it is highly unlikely for new CVs such as **gun-hunt* or **run-hunt* to appear. Such predictions are warranted in view of the fact that "the use of a new item in a construction requires a lot of relational knowledge or structural alignment" (Boas 2003 quoted after Bybee 2010: 59). This knowledge is not analytical and users do not carry out detailed syntactic analysis, rather they intuitively copy the cognitive map available from the source exemplar and carry it over to analogical creations.

5. Conclusions

CVs represent integrated conceptual, semantic, morphological and lexical units with complex internal structure in which predication and naming are intricately interwoven. Constraints on the appearance of CVs in English are conceptual and pragmatic, not grammatical in nature. CVs epitomize "James' Law of Contiguity" according to which "co-occurring experiences tend to be associated in cognition. Thus meaning is assigned to the largest chunk available – a word, a phrase or a construction" (Bybee 2010: 8). They satisfy an important naming need and are freely used in on-line communication. CVs are subject to just one strict requirement – ''the problem of distinguishing what the language tells one from what one knows about the world'' (Fodor and Lepore 1998: 274). They are the prototype of what scholars in pragmatics with relevance-theoretic orientation have identified as ad hoc concepts (Barsalou 1992, Carston 2002, Wilson 2003, Barsalou 2005).

With CVs on the rise in English (Wald and Besserman 2002) it is safe to claim that verbal compounding in English has achieved heightened productivity. Assuming analogical elaboration is a powerful mechanism in the creation of CVs, new analogical CVs result from compounding, no matter what the exact origin of the exemplar source is. Pennanen (1966: 115) clearly formulated the correlation between analogical elaboration and the nature of the word formation pattern involved in the creation of novel CVs, even though he didn't use the terminology in circulation today:

> The reciprocal influence of the various patterns of word-formation plays an important role. The existence of composite verbs of a given type, formed for instance by retrograde derivation, will encourage and facilitate the formation of similar verbs by other means of word-formation, e.g. by conversion or compounding, and vice versa. Thus *chain-smoke* (1946) is a back-formation from *chain-smoker*, but *to chain-drink* (*Time* Nov. 16, 1958, p. 30) is an analogical compound formation.

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What is more in a usage-based framework what counts is not what is analyzable by cognoscenti but what is intuited by ordinary users and they are rarely aware of the exact word formation processes giving rise to something which they use to satisfy onomasiological and pragmatic needs. Users exploit a "maximization of opportunity" (Libben 2006) in which by analogy they use/create CVs without analyzing the category membership of the elements that make for them a conceptual whole. Besides its naturalness, the assumption about the acategoriality of the internal constituents of a CVs (and compounds in general) has the methodological advantage of being able to accommodate without further provisions phrasal first constituents, e.g. *do-it-yourself kit*.

Adopting the above claim as an analytical premise, allows us to introduce a classificatory scheme based on two semantic gradient criteria – constituency which is interpreted as conceptual meaning contribution of constituents within the non-compositional semantics of the CV in terms of overall intra-frame activation of the CV's "conceptual core" and exocentricity. Applying this classificatory scheme preserves unified classification and interpretation of word formation niches, without imposing dissociations between members of the same niche, which happens if we stick to the subordinate, coordinate and attributive one. The classificatory scheme correlates with McGregor's (2002) epistemological super- vs. sub-classification which provides for unified semantic interpretation of the two classes – new event types vs. subtypes of events. Most CVs from Group A are not registered at all because they are most easily understood in communicative exchanges embedded in rich socio-pragmatic context in face-to-face interaction. This probably prompted Hall's (1956: 86) observations that "a large number of our noun-incorporating verbs are nonce formations, lost forever if not recorded by someone among the immediate hearers".

Testing the robustness of the suggested classificatory system by examining its applicability for the CV lexicon of other languages and conducting research studying the socio-pragmatic constraints/prompts for using/creating novel CVs are the two lines for immediate future research, which will deepen our understanding of the cognitive and creative complexity of CVs in the English language.

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Appendix[9]

Group A	Group B
apartment-hunt (n)	*back-slide* (x)
baby-sit (x)	*back-stop* (n)
bad-mouth (n)	*bottle-feed* (x)
bankroll (n)	*catfoot* (n)
barnstorm (x)	*chain-smoke* (n)
belly-ache (x)	*crash-proof* (n)
blackball (n)	*crowd-surf* (n)
blacklist (n)	*curry-comb* (n)
blackmail (x)	*day-dream* (n)
boyfriend-drop (x)	*dog-paddle* (n)
cherry-pick (x)	*double-book* (n)
dog-ear (x)	*drip-dry* (n)
dovetail (x)	*fast-talk* (x)
ear-wig (x)	*fine-tune* (n)
eavesdrop (x)	*force-feed* (x)
foul-mouth (n)	*free-associate* (n)
graymail (x)	*freeze-dry* (x)
gum-shoe (x)	*frog-march* (n)
hag-ride (x)	*gift-wrap* (n)
hamstring (x)	*guest-conduct* (n)
head-hunt (x)	*hand-feed* (n)
high-hat (x)	*hero-worship* (n)
hightail (x)	*mass-produce* (n)
hood-wink (x)	*moonlight* (x)
house-sit (n)	*price-mark* (n)
house-train (x)	*pussyfoot* (x)
hum-bug (x)	*sleep-walk* (n)
manhandle (n)	*smooth-talk* (x)
mothball (x)	*spatch-cock* (n)
name ambush (x)	*spoon-feed* (x)
piggyback (x)	*stage-manage* (n)
railroad (x)	*stir-fry* (n)
sandbag (x)	*sundry* (n)
snowball (n)	*sweet-talk* (x)

[9] These CVs constitute a representative sample of the corpus that is being developed as part of this ongoing research on CVs in English and Bulgarian.

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soothsay (n)
tongue-lash (x)
vague book (n)
whitewash (x)
woolgather (x)
teamteach (n)
tumble-dry (n)
water harden (n)
whistle-blow (n)
whistle-stop (x)

Legend:
(n) = only semantically endocentric senses.
(x) = already developed semantic exocentricity (i.e. the verb either has only exocentric senses or besides the endocentric ones has also developed exocentric ones).

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