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On the analysability of English exocentric compounds*

In the past two decades, numerous studies have been written on the successful application of metaphor, metonymy and blending in the analysis of idiomatic expressions which traditional linguistic literature treated as semantically unanalysable phenomena, that go against the theory of compositionality (on the non-analysability of idioms see for example Allen 1986, Cruse 1991, Fraser 1970; on the analysability of idioms see for example Benczes 2002, Gibbs 1994, Lakoff 1987, Kövecses and Szabó 1996). A similar view was adopted for the so-called exocentric compound expressions (for the original definition of endo- and exocentricity see Bloomfield 1933)[1]. Since the vast majority of English compounds is endocentric (Bloomfield 1933), linguistic literature has a tendency to mention exocentric combinations only peripherally (if they are mentioned at all), and views these constructions as semantically non-transparent (see for example Dirven and Verspoor 1998, Jespersen 1954, Katamba 1993, Levi 1978, Marchand 1960, Selkirk 1982, Spencer 1991). The present paper takes a close look at these much-ignored constructions and claims that the semantic relations that might hold between the modifier and head elements of such compounds are exactly the same

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[1] Bloomfield (1933) suggests two main approaches for the classification of compounds: the analysis of the relation of the members on the one hand and the analysis of the relation of the compound as a whole to its members on the other hand. While the former line of analysis follows syntactic considerations, the other raises the issue of endo- and exocentricity. In endocentric constructions, the compound is the hyponym of the head element: *armchair* is a kind of chair. In the case of exocentric compounds, the compound is not a hyponym of the head element: *blue-stocking* does not denote a kind of stocking but refers to a well-educated woman.

as those that exist between the modifier and the head of endocentric compounds (e.g. part–whole; source–result, time–object, etc.). Moreover, "exocentric" or "non-transparent" compounds are just as easily analysable as endocentric ones. With the help of cognitive linguistic "tools" such as metaphor, metonymy and blending among others, their meaning becomes analysable and transparent. Thus there is no need for the traditional distinction between the two categories of semantically endocentric and exocentric compounds: all we are dealing with is a more imaginative word formation process. Therefore I suggest using the term "creative compound" for metaphorical (and/or metonymical) noun–noun combinations.

Keywords: analysability; blending; compositionality; compounds; creativity; endocentric; exocentric; profile determinacy.

1. Endocentric and exocentric compounds

The notion of headedness is a significant issue in the discussion of compounds, especially in the work of generative morphologists such as Williams (1981) or Selkirk (1982). Similarly to phrases in X-bar syntax, words also have heads. In the case of compounds, syntactically the head is the dominant constituent of the construction, which means that the inflectional properties of the compound are inherited from the head element. Semantically, the head of a compound specifies the class of entities to which the compound belongs (Katamba 1993). It is a general assumption that the majority of English compounds follow the Right-Hand Head rule (Williams 1981)[2] and accordingly are endocentric from both a syntactic and a semantic point of view. There are, of course, exceptions that fail to abide by these suppositions, such as exocentric or left-headed constructions.[3] Selkirk nevertheless does devote a couple of pages to the idiosyncratic nature of exocentric compounds–though the author looks upon this linguistic phenomenon

[2] This defines the head of a morphologically complex construction as the right-hand member.

[3] As Bauer and Renouf (2001) point out, exocentric or left-headed compounds are regarded as exceptional cases in the sense that there are not too many of them—and this is where many linguistic studies go wrong. Their corpus-based study (coming from the British newspaper *Independent* over a period of ten years) has shown that English neologisms thrive with cases which were taken as borderline formations. The case in point is that there are plenty of "unexpected trends" (p. 120) in English word formation, and a proper analysis or description of the English language needs to fit these exceptional types in and provide an explanation for them. Bauer and Renouf's observation is highly relevant for the present study as well, since they question one of the most basic questions in word formation: if a pattern is atypical, does it also mean that it is exceptional? Their paper suggests that the answer to this question is negative.

as exceptional when she wishes to examine "the few cases of exocentric (non-headed) compounds in English" (p. 23). Selkirk does not go into the explanation of the semantics of these constructions at all; she proposes instead special rules in the semantic component of English grammar by which exocentric compounds can be interpreted. (Unfortunately no other reference is made to the nature of these rules.)[4]

In a textbook summary of generative morphology, Katamba (1993) criticises Selkirk (1982) for introducing the idea of separate semantic rules to interpret exocentric compounds. He argues instead for a simple listing of the meanings. In Katamba's view, both idioms and exocentric compounds are listemes with regard to their semantics—which is opaque, i.e. not subject to compositionality. This is the reason why, according to the author, exocentric compounds are used much less frequently than endocentric compounding in the creation of new words. However, if the semantics of exocentric compounds is opaque then why bother with using them at all? It would be more evident—following Katamba's line of reasoning—to denote things only with semantically endocentric compounds. Yet the simple fact that English *does* have such constructions implies that either English speakers like to invent dim and murky terms when creating a new word for public access or that the meaning of exocentric compounds is not as opaque as it seems.

[4] One of the strongest criticisms of the transformationalist/generative approach is provided by Botha (1968), who first of all criticises both Hatcher's (1960) and Bloomfield's (1933) classifications of English noun compounds, arguing that both linguists based their systems on "arbitrarily selected criteria, are not susceptible to testing, and make no empirical claims" (p. 55). As Botha points out, such classifications are justified by linguists on the ground that they are "elegant", "simple" or "logically consistent"—although no explanation is provided why a set of linguistic statements should conform to these methodological criteria. Botha discusses Afrikaans "metaphorical compounds" in detail, as there is an abundance of such metaphorical constructions in the Afrikaans language. The author claims that in constructing an Afrikaans transformational generative grammar of compounds, metaphorical constructions cannot be left unconsidered. Botha classifies metaphorical compounds into three main types: 1) constructions which have a metaphorical sense as wholes (*melkkoei* "milk cow"—'something bringing in money as regularly as a milk cow'); 2) compounds which are metaphorical because of the metaphorical sense of one or more of their constituents (the first constituent is metaphorical: *klokrok* "bell skirt"—'a skirt shaped like a bell'; the second constituent is metaphorical: *handskoen* "hand shoe"—'glove'); 3) compounds which have a metaphorical sense not only as wholes, but have additionally one or more constituents which are used in a metaphorical sense (*tranebrood* "tear bread"—'living earned through suffering').

2. Transparent and non-transparent compounds

In a textbook on cognitive linguistics, Dirven and Verspoor (1998) discuss the semantics of compounds from a more flexible perspective. They leave behind the traditional categorisation of endo- and exocentricity (in fact, these terms do not even turn up in the text); instead the authors argue for a cline of transparency on which compounds can be placed on the basis of the transparency of their meaning. At the fully productive (and transparent) end of the continuum, both parts of the compound and the semantic link between them "are unequivocally analysable and hence immediately transparent" (p. 60), such as *apple tree*. In the case of partially transparent expressions, the components are still analysable but the semantic link is less apparent and insufficient to see which subcategory the meaning of the compound involves, such as *blackbird* which does not denote a black type of bird but a bird species. At the other end of the continuum lie non-transparent expressions which Dirven and Verspoor also call "darkened compounds": in these cases, the authors claim, metaphorical or metonymical processes are involved in the meaning of the constructions, such as *red tape*, which does not describe a kind of tape but refers to long and irritating bureaucratic procedure.

There are two main problems with Dirven and Verspoor's (1998) analysis. Firstly, their definitions of the various degrees of transparency are very vague indeed. When *is* a semantic link "unequivocally analysable" in the case of transparent compounds? Are there certain semantic relations which are more transparent than others? If yes, what are these? Needless to say, the problem also arises in the case of partially transparent compounds. When does a transparent compound become partially transparent? In my view, partial transparency might involve some sort of meaning specialisation or generalisation, thus *ashtray* is not really a tray, nor a tray for ashes, but a specific kind of 'tray' for cigarette ashes. *Attaché case*, on the other hand, could be an example for a partially transparent compound where generalisation of meaning occurs: it is not a case used by attachés only, but by many people in all sorts of white-collar professions.

However, the introductory purpose of Dirven and Verspoor's (1998) textbook might offer an excuse for the relative superficiality of their definitions, as the limited space did not allow for in-depth elaborations on the various topics, including the transparency of compounds. Nevertheless, the second problem of their analysis is more serious and inexcusable. The authors state that non-transparent or darkened compounds are metaphorical or metonymical: yet such a claim is at odds with their explanation of *information highway* (metaphorically referring to the internet), which they see as "easily analysable" (pp. 60–61) on the basis that the metaphorical meaning of *highway* is linked to the source domain of *traffic* through the target domain *information*, and with the help of our

cultural knowledge we know the cultural background to which the word refers to. The juxtaposition is the following: if a metaphorical expression is easily analysable indeed, as the authors rightly say so, then why should such a compound be placed at the non-transparent end of the continuum? The answer, in my view, is that there is no need for us to do so in the first place. If metaphor and metonymy are everyday processes of thought, as Lakoff and Johnson (1980) say they are, then metaphorical and metonymical compounds are just as normal and everyday constructions—and just as transparent—as nonmetaphorical or nonmetonymical ones.

3. Methodology

If metaphorical and metonymical compound expressions are taken as transparent constructions, then this presupposition implies that their meaning is analysable. The next main concern is how to proceed in their analysis. Langacker (1987: 450) maintains that linguistic phenomena are more likely to show partial compositionality than to be fully compositional. Composite structures—such as noun–noun compounds—do follow conventional patterns of composition, that is, the relation that they bear to their components is not random, nor arbitrary. Yet composite structures are not constructed out of their components, nor are they "consistently or fully predictable" (Langacker 2000: 16): "Rather than *constituting* a composite structure, the component structures *correspond* to certain facets of it, offering some degree of *motivation* for expressing the composite conception in the manner chosen" (ibid., italics as in original). Constructions[5] such as *black bird* (meaning 'a bird that is black') belong to the group of fully compositional items, in such cases the composite expression has a "regular composite function" where the two components A and B combine on the basis of a regular syntactic rule (ADJ + N) to give the composite element C (which is then "algorithmically derivable from A + B by an associated rule of semantic interpretation).[6] However, *blackbird* (meaning a bird species) shows partial compositionality because even though the composite structure C is a combination of the meanings of its components, it has undergone a specification of meaning since it refers to a specific type of black bird.[7] A composite structure such as *blackboard* is also partially compositional, though in a different sense as *blackbird*. Here the meaning of the composite construction is extended to refer to boards which are

[5] A construction is a symbolically complex expression (Langacker 2000: 12–13), that is, it can be characterised as an assembly of symbolic structures.

[6] Thus the composite construction can be expressed as the following: C=[AB].

[7] Thus *blackbird* can be expressed by the formula C=[ABX], where X marks a specialisation of the meaning of the components.

not black in colour but can also be green or blue for example.[8] Thus *blackboard* can be neither a board, nor necessary *black* in the prototypical sense of the words.[9] In Langacker's view, when a new linguistic expression is coined, it is interpreted with a quite rich contextual and specified meaning, therefore C≠[AB]. As the form gets to be established, some of this extra meaning is retained and that is the reason why most composite expressions have a conventionalised meaning that is more specific than their compositional value.

Figure 1a (after Langacker 1991, figure 7) shows the highly schematised constructional schema for forming noun–noun compounds in English, where two nouns (denoting different concepts) can be combined into one semantic unit. All the structures and categorizing relationships have the status of units, which are indicated by the boxes. *Figure 1b* shows how we are able to arrive at the composite expression of *jar lid*, the composite symbolic structure of the combination of [[JAR]/[dʒA:]] and [[LID]/[lɪd]], with the application of the noun–noun constructional schema. The assembly of this expression comes from a number of pre-existing units: the constructional schema, the components *jar* and *lid,* and the categorisation of *jar* and *lid* as nouns.

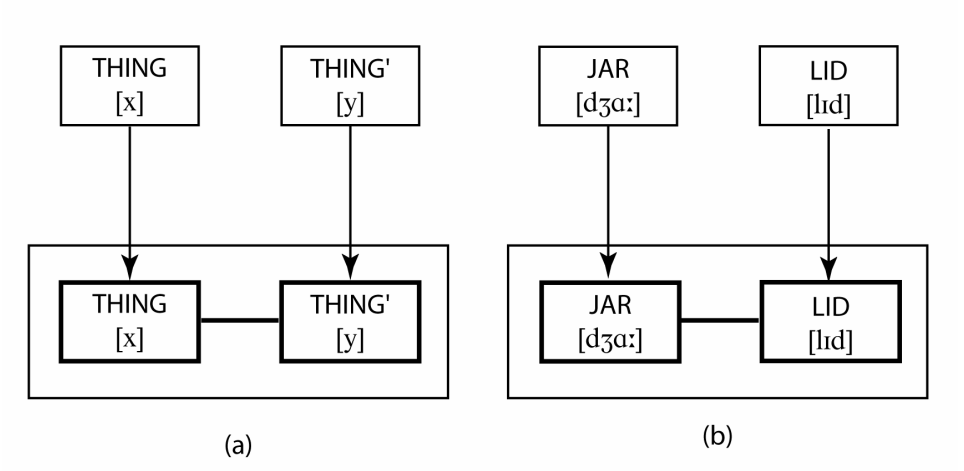

Figure 1. The constructional schema of noun–noun compounds (a); and the constructional schema of *jar lid* (b) (after Langacker 1991, fig. 7).

[8] It is very interesting that although there is no *greenboard* or *blueboard* in English, *whiteboard* does exist, which, according to the LDOCE, is a "large board with a white, smooth surface used in classrooms for writing on".

[9] Thus *blackboard* can be formalised as C=[A'B'], where A' and B' refer to the non-prototypical use of the respective words.

Jar lid is an example of a regular pattern in English compounding, a sequence also observable in e.g. *milk carton*, *salad oil*, *door knob*, *pencil eraser*—to name but a few. Phonologically, both *jar* and *lid* is a word, while at the semantic pole each is a noun by profiling a thing. *Jar* profiles a specific kind of container, while *lid* designates the cover for a container of an unspecified nature. The composite structure *jar lid* consists phonologically of a two-word sequence, while semantically it profiles the cover for a jar in particular. In a construction, the component and composite structures are linked by correspondences—these specify how the components are integrated to form the composite structure (e.g. the semantic correspondences of *jar lid* equate the unspecified container evoked by *lid* to the specific container profiled by *jar*). In a typical construction, one component is schematic with respect to the composite structure as a whole: while both the schematic component and the composite structure construe the scene in the same fashion, particularly in regard to profiling, they differ in the level of specificity: the composite structure is more specific with regards to the thing that it profiles (*jar lid* is more specific than *lid*). In the case of *jar lid*, *lid* will function as the profile determinant, as this is the constituent that construes the same scene as the composite structure (Langacker 2000: 16–18).

Warren (1992), though not working in a cognitive linguistic paradigm, examines noun–noun combinations of the "exocentric" sort with the help of metaphor and metonymy. In her view, *hammerhead* ('a stubborn person') is an example of a metaphor within a metonymy ("metaphor-in-metonymy"), where the hammer metaphorically refers to something hard, and the compound as a whole is a PART FOR WHOLE metonymy (the head is used to refer to the whole person). There are also cases where metonymy works within a metaphor ("metonymy-in-metaphor"), as in *clockwork orange* ('a person made into an automaton'): for one, the hero of the novel *Clockwork Orange* is in a metonymical relationship with the text itself (PLACE FOR PERSON), secondly there is also a metaphor at work where a person is likened to a machine.

While Warren's (1992) analyses are elegant solutions to uncovering the meaning construction of the constructions (and she can also be acclaimed for pointing out a very significant characteristic of these expressions: namely that metaphor and metonymy can *both* act simultaneously upon the meaning of the compound), metaphor and metonymy are just one part of the issue at hand. In many metaphorical and metonymical noun–noun combinations, the resulting overall meaning is very similar to the emergent structure of blended spaces (Fauconnier and Turner 1998). Thus conceptual blending theory has been put to use to try and explain how people combine concepts in order to yield new ones in the form of compound expressions. Significant work has been carried out by Fauconnier and Turner (1998, 2002) and Coulson (2000), who called for the establishing of a semantic theory which could explain less prototypical cases as

well: "the goal is to formulate an account of conceptual combination that is general enough to encompass both compositional and noncompositional phenomena" (p. 125).

Coulson (2000) relies on conceptual blending theory in explaining the meaning of several compound expressions. Although the author discusses each example in elaborate detail, there are a number of questions which are not addressed and which, I believe, apply to all the examples of Coulson. First, she does not explain what relation is there between input spaces and the composite elements of the compound. At first glance it seems that an input space is correlated to one of the elements in the compound: for example, *petfish* has two input spaces, each being one of the composite expressions of the compound (*pet* and *fish* in *petfish*). However, her other example, *caffeine headache* has three input spaces: *headache*, *counterfactual* [scenario], *caffeine*. In a further example, when analysing the expression of *hot lid*, the input spaces do not correlate with the elements of the compound at all but are more abstract entities: *temperature* and *container*.

The second issue which needs to be raised regarding Coulson's analyses are the elements and relations which get listed in the input spaces. What elements and relations should we list under an input space? According to Coulson (2000: 129), "[f]rames associated with each of the component nouns are evoked in the input spaces of the network." However, this methodology leaves substantial leeway for the linguist to include data based on subjective selective criteria. A further problem is posed with the use of the relations themselves, which are similar in concept to the transformational and early generativist accounts of compound expressions.[10] While a relation such as "Swims (Fish)" in the *petfish* example seems to be easy to understand ("the fish swims"); the relations "Hot (Substance) Solid/Liquid/Gas" or "Lid (Sturdy, Plastic) in the *hot lid* analysis are more difficult to grasp.

The problems encountered so far might imply that the analysis of metaphorical and/or metonymical expressions lead linguists into a dead-end street. This is not so, however. In an analysis of adjective–noun combinations, Sweetser (1999) suggests that "the variability and complexity of these [both adjective–noun and noun–noun combinations] constructions' interpretation suggests that a

[10] These approaches tried to explain the semantic relationship existing between the two elements of the compound by an underlying syntactic structure (Lees 1968; Levi 1978). For example, Levi (1978) argued that nominal compounds are the result of the transformation of an underlying relative clause. She proposed that the number of deletable predicates can be limited to nine, such as cause, have, make, use, be, in, for. However, not all nominal compounds can be characterised by these predicates and some can be predicated by more than one: *snake poison* can either be "poison [produced] by snakes" or "poison for snakes [in order to kill them]".

variety of mechanisms may be involved in their semantic interpretation" (p. 131). What this means is that the analysis of such compounds requires not only metaphor and metonymy, nor just blending theory, but also other cognitive linguistic "tools", such as frames, active zone, profiling and construal.[11] Sweetser (p. 145) points out that by the application of mental spaces in semantic structure, we get metaphor and metonymy "for free": there is no need to create separate mechanisms by which a component in a composite structure profiles a metaphorical (or metonymical) domain.

4. Metaphor-based modifier: The simple (?) case of *armchair*

After elaborating on the proposed methodology, I wish to turn to specific analyses of metaphorical compounds. Even a seemingly straightforward—traditionally "endocentric"—noun–noun combinations such as *armchair* ('a comfortable chair with sides that you can rest your arms on') presents an exciting challenge of a metaphor-based creative compound. If one considers the elements of *armchair* (*arm* and *chair*) to stand in a purpose–object semantic relation with one another, where *chair* is used for the purpose of resting one's arms, then the compound is not metaphorical at all.[12] However, I assume rather that the modifying constituent in *armchair* is understood metaphorically, to mean the armrests of a chair. Therefore the semantic relation that exists between the two constituents of the compound is not purpose–object, but part–whole.[13] If this interpretation is correct, then the chair itself is conceptualised as a human being

[11] This idea is not completely new in cognitive linguistic literature. Ryder (1994) carried out an in-depth analysis of noun–noun compounds within a cognitive linguistic framework, using the notions of profile determinacy and schema theory. However, she limited her analysis to the so-called endocentric compounds exclusively, i.e. constructions whose semantic head is situated on the right-hand side of the expression. In her view, exocentric compounds lack a profile determinant: they might have started off as complex endocentric constructions, such as *hammerhead shark*, but then they lose their head because the head is redundant in most contexts in which the expression is used (and thus the construction becomes simply *hammerhead*, referring to a shark species).

[12] However, in this case the compound is metonymical: *arm* (the object of the action) stands for the act of resting one's arms. Therefore, the OBJECT FOR ACTION (Radden and Kövecses 1999: 37) conceptual metonymy acts upon the modifying constituent.

[13] Both Downing (1977) and Warren (1978) studied the possible semantic relations that might hold between the two elements of a noun–noun combination, and attempted to provide a list of the most frequently occurring types. Both authors came up with astonishingly similar results, and, needless to say, part–whole appeared in both studies as a highly frequent semantic relation among English noun–noun compounds. (However, it should be kept in mind that both Downing and Warren excluded "exocentric" compounds form their analyses.)

terpretation is correct, then the chair itself is conceptualised as a human being with arms, legs and back.[14]

Nevertheless, it needs to be pointed out that not all chairs with armrests are called an *armchair*. A prototypical *armchair* is made of a comfortable material, has large armrests and is used mainly in homes. While chairs used in offices, for instance, often come with armrests, they are not called *armchairs*.[15] Therefore, the modifying constituent of *armchair* might have been understood metaphorically in the first place, but later on the compound underwent a process of lexicalisation, by which it has come to denote a specific kind of chair with armrests.

5. Metaphor-based profile determinant: *jailbird*, *belly button* and *meadow mayonnaise*

While *armchair* contained a metaphorical modifying element, the three compounds that are examined in this section all exhibit a metaphorical head element, i.e. profile determinant. They share a further common characteristic: all three examples can be very well modelled with the help of a single-scope blend. In the case of *jailbird* ('person serving a prison sentence', example from LDOCE), the two input spaces are IMPRISONED PERSON and CAGED BIRD, where the latter is the source domain and the former the target domain, thus we are accessing the concept of a prisoner through the image of a caged bird (*Figure 2*). The conceptual metaphor A PRISONER IS A CAGED BIRD operates between the input spaces, thereby linking the prisoner in the target domain to the bird in the source domain, and the prison cell in the target domain to the birdcage in the source domain respectively. It should be noted that not all elements within the CAGED BIRD domain take part in the blend: such as the appearance of the bird (i.e. feathers, beak, etc.), its ability to sing and that it is usually kept as a pet, just to name a few. Similarly, not all elements in the IMPRISONED PERSON domain are "acti-

[14] An evidence for the human conceptualisation of pieces of furniture can be found in Baron (1982, cited in Kövecses 2000: 252). Baron writes about an incident that involved Captain Frederick Marryat, and Englishman travelling in America in the 1820's. The Captain went to a seminary for young women, where, to ensure good taste, a four-legged pianoforte had its legs dressed "in modest little trousers, with frills at the bottom of them!" (from the Diary of Captain Marryat, pp. 246–247). A further piece of evidence for claiming that *arm* is metaphorically understood in *armchair* is provided by the fact that the armrests of chairs were often carved or created to resemble human arms (and the legs of the chair to look like human legs).

[15] Instead they are referred to as a *guest chair* or *stackable chair*—where the first compound highlights the chair's function (used by guests), and the second compound highlights the chair's most important property (i.e. that they can be stacked on top of each other, thereby not taking up too much office space).

vated" in the blending process: the fact that people go to prison because they committed something against the rules of society, or that the imprisonment is for a certain amount of time (except in life sentence cases) after which the prisoner is allowed to go free. Yet there must be something perceived as similar in the two domains, otherwise the blend would not take place at all. This similarity is provided by the generic space, which is no more and no less than a highly schematic domain shared by both inputs. In this case, the shared generic structure is CONTAINMENT WITH CONSTRAINT. An imprisoned person and a caged bird are both contained in a prison cell and a cage respectively against their free will.[16]

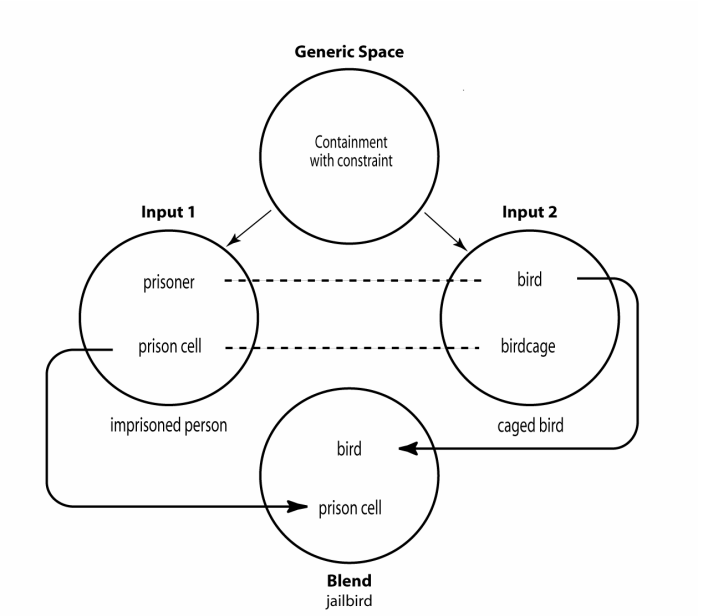

Figure 2. The blend analysis of *jailbird*.

The blended space inherits the structure of the input domain, in this case the CAGED BIRD domain, where the prisoner is conceptualised as a bird within a

[16] Kövecses (2002: 79–83) notes that when source domain is applied to a target domain, not all aspects are brought into focus, a process that is called hiding. Thus the metaphor concentrates on one (or some) aspects of the concept and the other possibilities will remain hidden. At the same time, the metaphor will accentuate a certain feature of the source, a process that is called highlighting. In *jailbird*, the generic structure offers a clue to the highlighted aspect of the source, namely containment with constraint. Other features, such as the circumstances of the constraint, for example, will remain hidden in the conceptual metaphor.

prison cell. The blend draws elements from both inputs selectively, thus creating an emergent structure based on composition.

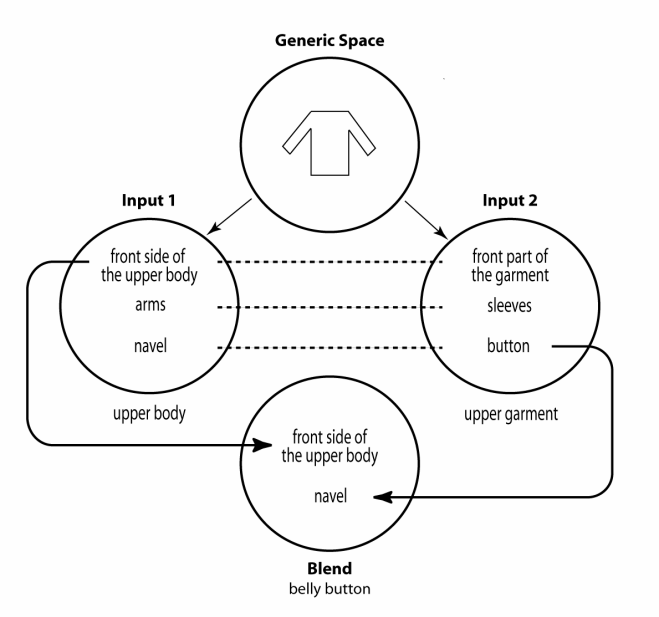

Figure 3. The blend analysis of *belly button*.

In *Figure 3*, the compound *belly button* ('navel', example from LDOCE) is also analysed within a single-scope network. One of the input spaces contains the domain of the UPPER BODY, which serves as the target domain. The other input contains the domain of an UPPER GARMENT, which acts as the source domain. Through the conceptual metaphor THE UPPER BODY IS AN UPPER GARMENT, the image of the upper body is mapped onto the image of an upper garment: the arms correspond to the sleeves and the front side of the upper body to the front part of the garment. The buttons on the front part of the garment are mapped onto the front side of the upper body, and thus one of the lower buttons of the garment corresponds to the navel. Similarly to *jailbird*, not all aspects of the various domains are activated in the blend: the material or the colour of the garment do not take part in the blending process, neither do the organs of the upper body (such as the heart, the lungs or the stomach). Nevertheless, there is some similarity between the upper body and an upper garment, namely their shape. This highly schematic, abstract image is contained in the generic space, which

maps onto both input domains and the blend and which makes the cross-space mappings between the two input domains possible. The blended space contains elements from both input domains, thereby creating an emergent structure based on composition (similarly to *jailbird*): the front side of the upper body from the UPPER BODY domain and the lower button of the garment (which corresponds to the navel) from the UPPER GARMENT domain are merged to give an image of an upper body that has a button in the place of the navel.

Meadow mayonnaise ('cowpat', example from Országh) follows suit to *jailbird* and *belly button*. Here, the input space which acts as the source domain contains the domain of FOOD WITH MAYONNAISE TOPPING. The other input space contains the domain of MEADOW WITH COWPAT; this serves as the target domain (*Figure 4*).

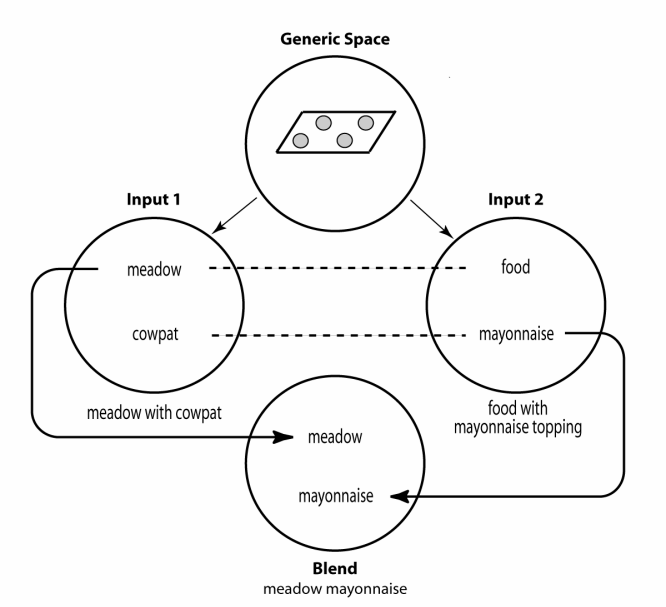

Figure 4. The blend analysis of *meadow mayonnaise*.

The conceptual metaphor A MEADOW WITH COWPAT IS (A) DISH WITH MAYONNAISE TOPPING operates between the two inputs, thereby linking the various elements to one another: the meadow in the target domain corresponds to the food in the source domain, and the cowpat corresponds to the mayonnaise topping, respectively. Once again, not all aspects of the metaphor are activated: there is no mention of cows in the blend, even though they "produce" the cow-

pat, and no reference is made to the specific nature of the food in the target domain (whether it is a hamburger, sandwich, pizza, etc.). However, the schematic image of the generic structure, an entity that has something on its surface, makes it possible to establish a similarity between the two input spaces. At a closer look, it becomes evident that cowpat and mayonnaise have more than one characteristic in common: both of them have a similar texture, a slightly similar colour and both are sticky. It is no accident that cowpat is compared to mayonnaise and not to ketchup for instance: the latter dressing does not have the off-yellow colour of the former. Such perceived similarities between cowpat and mayonnaise give rise to the blend, which contains an emergent structure based on composition: the meadow element of the source domain and the mayonnaise element of the target domain are merged to give an image of a meadow "topped" with mayonnaise.

After having looked at the blending processes, it is necessary to analyse the composition of the compound expressions themselves, that is, to see how the various components add meaning to the whole expression. In all three cases (*jailbird*, *belly button* and *meadow mayonnaise*), the meaning of the compounds arises from a blend that is based on the combination of elements from two input spaces. This blending process is visible on the word-level as well, since all three compounds are constituted of two words that represent the two input spaces of the blending process. Thus, in *jailbird*, *jail* relates to the IMPRISONED PERSON domain (the target domain), and *bird* relates to the CAGED BIRD domain (the source domain). In *belly button* the same situation can be observed, since *belly* refers back to the UPPER BODY (source) domain, while *button* refers to the UPPER GARMENT domain (the target). *Meadow mayonnaise* follows the same pattern: *meadow* can be linked to the MEADOW WITH COWPAT (source) domain, while *mayonnaise* can be connected to the DISH WITH MAYONNAISE TOPPING (target) domain.

What happens in all three cases is that the second (right-hand) component in the compound serves as the profile determinant, which is then modified by the first (left-hand) element. However, the right-hand element profiles a metaphorical domain, whose meaning nevertheless can be easily retrieved, since the correspondences between the two input spaces help keep track of the mappings between the source and target domains. As Langacker (1987) has pointed out, the meaning of the composite expressions is not the simple sum of the meanings of the components; instead, the composite elements motivate the meaning of the compound by providing access to semantic networks. This is exactly what happens in these cases as well: the component nouns activate various semantic networks or domains, which serve in fact as input spaces to the blending process by which the composite meaning can be unravelled. As Sweetser (1999: 144–146) argues, the left-hand element acts as a "contextual cue" which prompts the lis-

tener to cognitively manipulate the various domains through blending in such a way as to arrive at the composite meaning. This mental "manipulation" is helped by the generic space, since its highly schematic structure is shared by both input spaces and the blend as well.

A further and very important question still remains open: on what basis is the modifier element chosen? Why is *jail* the left-hand element in jailbird, and not *prisoner* for example? Or why is *belly* selected in *belly button* to stand as the modifier element, and not *chest* or *navel*? The same issue can be raised with *meadow mayonnaise*: why *meadow* and not *cow*? The answer lies in the basic semantic relations that exist between the components of nominal compounds. As it has been already pointed out in footnote 13, Downing (1977) and Warren (1978) have shown that there are certain semantic relations between the components of English noun–noun combinations that show up regularly and seem to be preferred over other possible relations. Thus, the components of *jailbird* represent the semantic relation of container–contained, since *bird* is contained in *jail*. This semantic pattern is nothing particular or extraordinary, there are many English compound nouns which also exhibit the same semantic relation (e.g. *pocketbook*). In both the *belly button* and the *meadow mayonnaise* examples, the components of the compounds are based on a location schema, displaying a location–located relation towards one another: *button* is located on the *belly*, while *mayonnaise* is located on the *meadow*. As Ryder (1994) claims, when creating a novel compound, the speaker chooses a head element that serves as the profile determinant (in the case of our compound expressions, the head profiles a metaphorical domain), and chooses a modifier which will cause the listener to find the common schema that will highlight the characteristic the speaker has chosen for picking out this referent from among others. However, the speaker is strongly affected by conventionalised expressions in the grammar that act as linguistic templates, such as whole–part, origin–entity, container–contained or location–located. In fact, containment and location are so ordinary semantic patterns that Ryder makes reference to both types as frequent and highly reliable linguistic templates in English compound formation.[17]

6. Metaphor-based modifier and metaphor-based profile determinant: *flame sandwich*

My last example, *flame sandwich* ('a note that consists of a negative comment surrounded by two positive comments', example from wordspy) represents a type of creative compounding where both the modifier and the head element (the

[17] It should be kept in mind, however, that Ryder (1994) excluded the analysis of exocentric compounds from her study.

profile determinant) are metaphorical. Flame sandwich can be considered as one of the epitomes of linguistic creativity. The structure of the meaning can be best analysed with the help of a multiple-scope blend, consisting of three input spaces: a SANDWICH domain, a LINE OF COMMENTS domain, and the ARGUMENT/FIRE domain (*Figure 5*). This third input space can be considered as a blend in itself, since it merges the two domains of ARGUMENT and FIRE through the ARGUMENT IS FIRE conceptual metaphor. According to Kövecses (2002: 114), one of the conceptualisations that we have of arguments is through the source domain of fire (i.e. through the ARGUMENT IS FIRE conceptual metaphor). An entailment of this metaphor is that an argumentative comment is a flame.

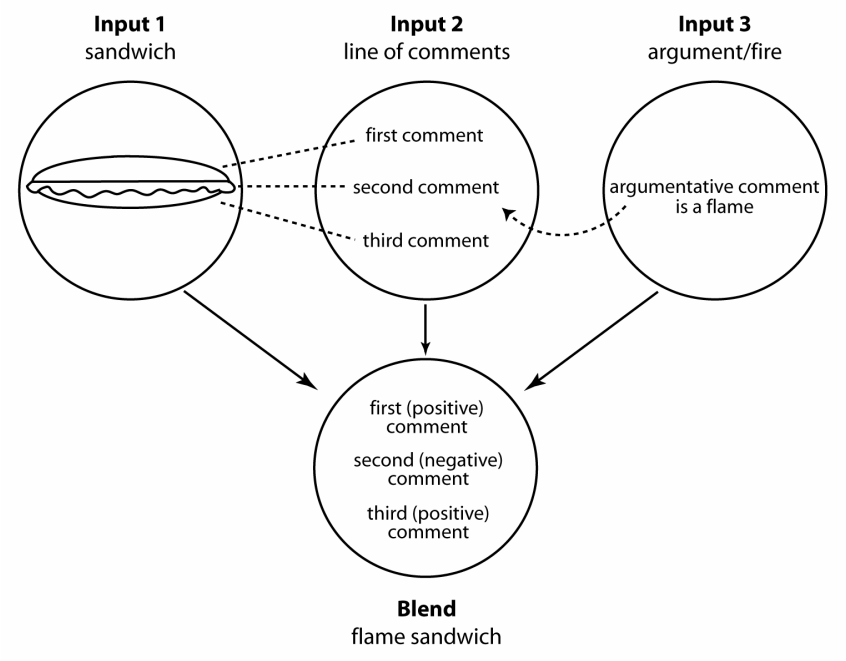

Figure 5. The blend analysis of *flame sandwich*

The head element, *sandwich*, provides the domain for the structure of the comment: the negative comment is "situated" between two positive ones just as a sandwich filling is situated between the two slices of bread. There are mappings between input 1 (SANDWICH domain) and input 2 (LINE OF COMMENTS domain): the slices of bread correspond to the first and third (positive) comments, while the filling maps onto the middle (negative) comment. However, I wish to emphasise here that the fact that the middle comment is negative does not come

from the sandwich domain, but from the third input space, i.e. the ARGUMENT IS FIRE metaphor, which is evoked by the modifying element of the compound, *flame*.

A *cheese sandwich* is a sandwich that has a slice of cheese in it, while a *ham sandwich* contains a slice of ham. Therefore, the modifying element in *sandwich* compounds specifies the filling that the sandwich contains.[18] This compounding pattern is observable in the case of *flame sandwich* as well, where the sandwich (i.e. line of comments) contains an entity that is metaphorically understood to be a flame. The choice for selecting *flame* and not *fire* in the modifying position can be explained by the characteristics of flames: there is an element of suddenness within them, that is, they quickly flare up and give off intense heat. However, they are much "smaller" in size than a fire: a fire can burn on and on, just as an argument can go on for a long time as well. However, a *flame sandwich* is a negative comment that is immediately followed by a positive one—therefore, the "size" of the argumentation is very limited indeed.

A further note can be added about the selection of *sandwich* as the profile determinant. According to Lakoff and Johnson (1980: 46–47), one of the possible ways we conceptualise ideas is in terms of food.[19] On the basis of the IDEAS ARE FOOD conceptual metaphor, it is quite "logical" to conceptualise our comments that we have about something also as a type of food. It is simply a next step in linguistic (and conceptual) creativity that we specify the nature of this food to best match the structure of our thought processes.

7. Conclusion

Traditionally, noun–noun combinations were classified into two semantic groups: in the case of endocentric compounds, the construction represents a subclassification of the entities expressed by the head noun (thus *apple tree* is an endocentric compound because it is a type of tree). Exocentric or headless constructions were regarded as exceptional cases, which failed to abide by normal compound formation rules, and for this reason they were excluded from linguistic analysis. Cognitive linguistic literature discarded the traditional classification of compounds, claiming that the analysability of nominal constructions is not a yes-no question but an issue of degree: thus there are transparent expressions

[18] This means that *flame sandwich*, like all the other *sandwich* compounds, follows a contained–container semantic structure.

[19] E.g.: What he said *left a bad taste in my mouth*; I just can't *swallow* that claim; That argument *smells fishy*; This is the *meaty* part of the paper (all examples are from Lakoff and Johnson, ibid.).

such as *apple tree* on the one end of the spectrum, and semantically opaque cases like *red tape* on the other end.

This paper argues that the difference between *apple tree* and *red tape* is not transparency, but creativity: the latter represents a type of nominal construction that has been created by a more imaginative word formation process. Therefore I propose using the term "creative compound" for metaphorical and/or metonymical noun–noun combinations. The paper proposes that the analysis of creative compounds require various cognitive linguistic tools, such as metaphor, metonymy, blending, profile determinacy, schema theory and construal.[20] It analyses the meaning of five metaphor-based creative compounds, *armchair*, *jailbird*, *belly button*, *meadow mayonnaise* and *flame sandwich*, showing that the component nouns of such constructions display the same semantic relations towards one another as those that come up in the majority of English noun–noun compounds (see the studies by Downing 1977 and Warren 1978). However, what makes *armchair*, *jailbird*, *belly button*, *meadow mayonnaise* and *flame sandwich* less ordinary is that in all five cases the viewing arrangement follows a metaphorical path: the left-hand constituent (as in *armchair*), the right-hand constituent (as in *jailbird*, *belly button* and *meadow mayonnaise*) or both constituents (as in *flame sandwich*) profile an entity that is understood metaphorically.

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[20] For a full description and analysis of creative compounds in English, see Benczes 2004.

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O MOGUĆNOSTI ANALIZE ENGLESKIH EGZOCENTRIČNIH SLOŽENICA

Brojni su radovi napisani u posljednja dva desetljeća o uspješnoj primjeni metafore, metonimije i konceptualne integracije u analizi idiomatskih izraza koje je tradicionalna lingvistička literatura držala pojavama koje se opiru analizi, a koji nisu u skladu s teorijom kompozicionalnosti (o nemogućnosti analize idioma usp. Allen 1986, Cruse 1991, Fraser

1970, a o mogućnostima njihove analize Benczes 2002, Gibbs 1994, Lakoff 1987, Kövecses and Szabó 1996). Slično se pristupalo i tzv. egzocentričnim složenicama (o izvornim definicijama endocentričnosti i egzocentričnosti vidi Bloomfield 1933). Kako je velika većina engleskih složenica endocentrična (Bloomfield 1933), lingvistička je literatura egzocentrične kombinacije spominjala samo uzgred (ako ih se uopće i spominjalo) te ih se držalo semantički netransparentnima (usp. Dirven i Verspoor 1998, Jespersen 1954, Katamba 1993, Levi 1978, Marchand 1960, Selkirk 1982, Spencer 1991). U ovom se prilogu razmatraju te zanemarene konstrukcije te se tvrdi da su semantički odnosi između glave i modifikatora potpuno isti onima kod endocentričnih složenica (napr. dio-cjelina, izvor-rezultat, vrijeme-objekt, itd.). Štoviše, tvrdi se da se "egzocentrične" odnosno "netransparentne" složenice mogu jednako lako analizirati kao i endocentrične. Uz pomoć kognitivnih "alata" poput metafore, metonimije i konceptualne integracije, njihovo značenje postaje transparentno i podložno analizi te stoga nema potrebe za tradicionalnom distinkcijom između semantički endocentričnih i egzocentričnih složenica. Umjesto toga predlažem pojam "kreativna složenica" za metaforičke (i/ili metonimijske) kombinacije tipa imenica + imenica.

Ključne riječi: konceptualna integracija; mogućnost analize; kompozicionalnost; složenice; kreativnost; endocentričnost; egzocentričnost, određenost profila.