

Réka Benczes

## What can we learn about the mental lexicon from non-prototypical cases of compounding?

A cognitive linguistic perspective

### Abstract

English is remarkably abundant in nominal compounds whose meaning is based upon some sort of metaphor and metonymy. Examples include both lexicalized ones, such as *couch potato* (denoting a person who spends too much time before the television snacking on unhealthy food), and novel ones alike, such as *muffin top* (denoting the roll of spare flesh which cascades over the top of low-slung jeans). Nevertheless, such compounds have often been dismissed in morphological literature as semantically opaque – non-compositional – phenomena that are not formed on the basis of productive patterns. This bias can be traced back to the widely acknowledged and applied endocentric–exocentric distinction, which is still the dominant approach toward the semantics of compounds.

Cognitive linguistics, however, has demonstrated that these “exocentric” compounds are indeed analysable with the application of conceptual metaphor and metonymy and blending among others. Through the analysis of numerous examples, the paper will focus on how the everyday creativity of language that is inherent in metaphor- and metonymy-based compounds can contribute to a cognitive semantics-based word formation theory on the one hand, and psycholinguistic models of compound representation on the other hand, in order to have a better understanding of the structure of the mental lexicon.

*Keywords:* exocentric compounds, creativity, novel compounds, metaphor, metonymy, cognitive linguistics, psycholinguistics, mental lexicon

### 1 Introduction<sup>1</sup>

English is remarkably abundant in compounds whose meaning is based upon some sort of metaphor and metonymy, which is immediately apparent from the vast number of examples that can be found in dictionaries. One such example is *belly button*, denoting the ‘navel’, coined in 1934 (*Oxford English Dictionary*; henceforth *OED*). Interestingly, *belly* was dropped in the Victorian era due to its “taboo” nature and was increasingly replaced by *stomach*, which consequently shifted in meaning to include both the body part that is located

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<sup>1</sup> I am immensely thankful to Péter Pelyvás for all the support he has given me throughout my academic career. A decade ago he acted as one of the reviewers of my PhD thesis on the semantics of metaphorical and metonymical compounds, and his favourable opinion convinced me to carry on with this line of research. Furthermore, as one of the key figures of the Hungarian cognitive linguistics movement, he has been a source of inspiration, constantly demonstrating with high-quality and internationally-acknowledged work that there is indeed life after generativism even in Hungary.

I am also indebted to my two anonymous reviewers for their invaluable suggestions.

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between the diaphragm and the groin, as well as the digestive organ that is contained in it. Apart from *stomach*, the Victorians referred to the taboo area via wonderfully creative (and now obsolete) compound expressions such as *bread basket* and *pudding house* (Burrige 2004: 42).<sup>2</sup> Needless to say, both expressions are metaphor- and metonymy-based: 1) an image schematic metaphor establishes the image-based resemblance between the shape of a bread basket or pudding house (the latter of which is a round container for puddings) and the belly; and 2) a CAUSE FOR EFFECT metonymy provides further motivation by creating a mapping between the thing that is eaten (bread and pudding, respectively) and the result (a bulging belly).

The ongoing appeal of metaphor- and metonymy-based compounds is also demonstrated by the more recently formed *muffin top*, which can be considered as one of the “success stories” of English word-formation. It was originally coined in 2003 by two Australian TV presenters to denote the spare flesh that overhangs loose-fitting jeans. In 2006, it was named as “Word of the Year” by the Australian *Macquarie Dictionary* and was also elected among the “most creative” terms the same year by the American Dialect Society. It eventually entered the online edition of the *OED* in March 2011.

Nevertheless, despite the preponderance of metaphorical and metonymical compounds in English, not much has been said about them in morphological literature on the grounds that they are not based on productive word-formation processes due to their exocentric nature. Such coinages are distinguished from endocentric ones, where the compound represents a subcategorization of the entity expressed by the head element (e.g., *apple tree* is a type of tree).

However, there is no legitimate reason to discard a class of compounds from a proper linguistic analysis on the grounds that they are atypical. The point is that there are plenty of “unexpected trends” (Bauer & Renouf 2001: 120) in English word-formation, and a full analysis or description of the English language needs to fit every type and provide an adequate explanation for them. As it will be demonstrated in the forthcoming sections, cognitive linguistics is especially suitable for accommodating less prototypical compounding patterns, and for this reason is more capable of examining the relationship between linguistic creativity on the one hand and compounding on the other.

The present paper will focus on noun–noun compounds in particular, this being the largest and most prevalent type of compounding in English. The structure of the paper is as follows: section 2 focuses on the traditional endocentric–exocentric distinction and highlights the limitations of this classification. By doing so, it also introduces an alternative term, “creative compound”, for metaphorical and/or metonymical compounds. Section 3 examines creative instances of language use, based on both lexicalized and novel examples. On the basis of the examples discussed in the previous section, section 4 reinvestigates the notions of

<sup>2</sup> One of the interesting questions that can be raised in conjunction with *belly button* is its appearance in the language in the first place, especially in light of the fact that *belly* was dropped from grace in the Victorian era. From a logical point of view, *stomach button* should have been coined instead. One possible explanation resides in the fact that *belly button* was coined on the analogy of other *belly* compounds that originated mostly from the 16th century and which did survive the Victorian purge, such as *belly-ache* (1552), *belly-cheer* (‘gluttony’; 1549), *belly-god* (‘a glutton’; c. 1540) or *belly timber* (‘food’; 1607). (The examples are from the *OED*.) A second possible motivating factor in the coinage of *belly button* is the alliteration of the initial letters in the respective constituents. As elaborated on by Benczes (2013), phonological analogy, in the forms of alliteration and rhyme, play a very influential role in the creation of novel forms.

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compositionality and creativity and their implications for the mental lexicon by drawing on cognitive linguistic theory and psycholinguistic evidence. The last, fifth section concludes.

## 2 From exocentric compounds to creative compounds

One of the basic tenets of formal semantics is the compositionality of meaning (also referred to as “Frege’s principle”). According to this theorem, the meaning of a sentence can be deduced from the meaning of its constituents (Kiefer 2000: 17). Although the focus of Frege’s principle is the sentence (more specifically the proposition contained in the sentence), the theory of the compositionality of meaning has been extended to lower levels of syntax as well, such as phrases and words, even though semantic compositionality can never be complete on the morphosemantic level due to the fact that all accepted words are lexicalized to a certain degree (Dressler 2005: 271). Needless to say, compositionality has also been a heavily debated topic in relation to compounds, whose meaning is, in most cases, not predictable from the components. For this reason it has often been argued that compositionality can help to distinguish between compounds (which are not compositional, such as *blackbird*, for the common species *Turdus merula* found all over Europe) and phrases (which still preserve the notion of compositionality, such as *black bird*, for any bird with a black colouring) – see, for example, Matthews (1974). The problem of compositionality is especially acute in the case of “exocentric” compounds, where the compound expression is not a subcategorization of the entity expressed by the head element (as in the case of endocentric compounds).

The notion of exocentricity (vs. endocentricity) originates from Bloomfield (1933), who applied these concepts from both a syntactic and a semantic point of view (here we will concentrate on only the latter) to both words (compounds) and units larger than words, i.e., phrases. Accordingly, the referent of *blue-stocking* or *red-head* does not belong to the “same species as the head member” (p. 236). These expressions are thus semantically exocentric because there is no hyponymical relationship between the head and the compound. In Bloomfield’s interpretation, the semantic pattern of exocentric compounds is the following: “object *possessing* such-and-such an object (second member) of such-and-such quality (first member)” (ibid., italics as in original). Needless to say, this pattern includes only metonymy-based expressions.<sup>3</sup>

Since Bloomfield (1933), the term “exocentric” has been used in the morphological literature to mean either one of the following: 1) a compound that does not have a (semantic) head; or 2) a compound whose head “falls outside” of the construction – hence “exocentric” (where the prefix *exo-*, originating from Greek, means “outside”). Both of these positions have been heavily influenced by lexicalist theories of word-formation that have relied on an X-bar notation (Bauer 1990: 1), and which defined the head of a compound predominantly from a grammatical point of view (Scalise & Fábregas 2010: 110). Headedness in morphology gained further impetus from the Right-Hand Head Rule, as advocated by Williams (1981), which claims that (at least in English) the head of a compound is the right-hand element.

<sup>3</sup> The terminological chaos that exists within compounding is well exemplified by the possessive exocentric construction (such as *redhead*). Originally, Sanskrit grammar applied the term *bahuvrihi* for this type exclusively, but later on the term was used for other types as well, or – quite generally – as a label for any exocentric compound (Scalise & Bisotto 2009: 36).

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The pervasiveness of the endocentric–exocentric distinction<sup>4</sup> has had a profound – and rather negative – effect on the scope of morphological research into compounding in the sense that linguistic literature has a strong tendency to focus on exocentric combinations only peripherally (if they are mentioned at all). This fact is also underlined by Scalise and Guevara (2006: 185): “In fact, while there is an extensive literature on endocentric compounding, the references to the theoretical and/or typological treatment of exocentric compounds are *very rare*” (emphasis added – RB). Although descriptivist approaches do make reference to exocentric combinations, these are typically more superficial than the detailed classifications of endocentric compounds (see, for example, Jespersen 1954, Adams 1973).

An exception to this trend is Marchand (1960), who devotes a whole chapter to the classification of exocentric compounds and distinguishes among five major types: 1) the “*pickpocket* type”, where the compound expression denotes the agent who (or which) performs the action indicated by the predicate-object relationship of the expression itself; 2) the “*runabout* type”, which is very similar to the first group, but where the second constituent is an adverbial complement, most often a particle; 3) the “*blackout* type”, which is a cross between the two former subcategories: while this class is semantically similar to *pickpocket*, morphologically it resembles the *runabout* type of compounds; 4) bahuvrihi constructions such as *hunchback*, *paleface*, *scatterbrain* which have a primarily identifying function; and 5) compounds such as *dugout* and *left-over* (Marchand does not give a typological explanation for this class).

As regards the transformational generativist account, it left the issue of exocentric compounds untouched, probably for the simple reason that the theoretical framework was unable to accommodate such combinations. This inadequacy was heavily criticized by Botha (1968), who made note of the fact that not only does Afrikaans contain a significant proportion of metaphor-based compounds (and which would be considered as exocentric and, therefore, would fall outside of linguistic analysis and description), but speakers have intuitions concerning the meaning of these expressions. In line with the general attitude outlined above, Kiefer (1992: 62) in his general account of Hungarian compounding considers exocentric compounds as “peripheral”, and, therefore, not worthy of a proper linguistic analysis. In Kiefer’s view, the productive patterns of Hungarian compounding are all endocentric – i.e., exocentric compounds cannot be formed on the basis of productive patterns.

There are evident difficulties in classifying compounds along the endocentric–exocentric distinction as first established by Bloomfield (1933). Quite often the reason why there is no head element in a compound is because it is considered by speakers to be superfluous and deductible from the context (this possibility is also alluded to by Marchand 1960: 11) – for example, a quick word search on Google easily confirms the fact that both *notebook computer* and *notebook*

<sup>4</sup> One of the main trends in the classification of compounds is the perseverance of the endo- vs. exocentric categories. Following Bloomfield’s (1933) original proposal, it has been also adopted in various forms by Spencer (1991), Fabb (1998), Haspelmath (2002), Booij (2005) and Bauer (2009). Nevertheless, neither one of these classifications are exactly similar in what further types are identified alongside the endo- and exocentric types, and what compound structures they consider to belong under the various compound types. Accordingly, Fabb (1998) proposes a three-way distinction, with the categories of endocentric, exocentric and appositional/dvanda (the latter meaning any structure that has two heads). Similar typology is suggested by Bauer (2009), who labels the third category as “coordinative” (and which subsumes both appositional and dvanda structures). Spencer’s (1991) classification, however, distinguishes between appositional and dvanda (and hence has four categories). In his classification, Haspelmath (2002) adds a further, fifth category, the so-called “affixed compounds” (such as *green-eyed*), while Booij (2005) assumes exocentric compounds to follow the [VN] pattern, and thus establishes the bahuvrihi type as a separate category.

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are used interchangeably. Therefore, classifying *notebook* as “exocentric” seems to be simply counterintuitive. At the same time, the “exocentric” nature of lexicalized compounds, such as *honeymoon*, is also questionable, as the two neologisms, *babymoon* (‘a special holiday taken by parents-to-be before their first baby is born’) and *familymoon* (‘a holiday immediately after a wedding where the bride and groom are accompanied by children from previous marriages or relationships’), testify.<sup>5</sup> *Honeymoon* originally referred to the first month of a marriage: the honey signifies the sweetness of new love, while the moon represents the fleeting feeling of love that will wane as quickly as the moon (*OED*). Speakers have, however, reanalyzed the meaning of *moon* as an intimate holiday following or preceding an important family event: in the case of *honeymoon*, the vacation follows the wedding, while in *babymoon* and *familymoon* it precedes the events. Therefore, even lexicalized compounds can become reanalysed and, therefore, remotivated by speakers and possess some degree of compositionality and analyzability.

All in all, the exclusion of exocentric compounds from a proper linguistic analysis can be attributed to the fact that such constructions have been mostly considered as 1) exceptional; 2) unanalysable; and 3) not formed on the basis of productive compound-forming patterns. Accordingly, Table 1 sums up the main assumptions with regard to endo- and exocentric compounds, as usually provided in the relevant morphological literature. The properties listed in Table 1 imply that endocentric compounds can be considered as the unmarked cases of English compounding, while exocentric compounds can be regarded as the marked ones.<sup>6</sup>

<b>endocentric</b>	<b>exocentric</b>
productive	non-productive
typical	atypical
transparent	opaque
analysable	non-analyzable

*Table 1: General assumptions about endocentric and exocentric compounds, as usually provided within traditional morphological literature.*

Nevertheless, all of the assumptions in Table 1 have been refuted, which, therefore, call severely into question the premise that exocentric compounding is a marked morphological phenomenon. First, as pointed out by Guevara and Scalise (2009), exocentric compounds (especially those that are based upon metaphor and/or metonymy) are quite common in a vast number of the world’s languages. In their large-scale typological study of word-formation in the world’s languages, Štekauer et al. (2012: 80) found 30 languages<sup>7</sup> out of their representative sample of 55 that possessed exocentric combinations. These thirty languages covered all major morphological types (agglutinative, fusional, isolating and polysynthetic) and came from sixteen language families.<sup>8</sup> In Štekauer et al.’s (2012: 82) view, the widespread

<sup>5</sup> The examples are from a web-based collection of English neologisms, <http://www.wordspy.com> (henceforth Wordspy). For a detailed analysis, see Benczes (2010).

<sup>6</sup> Following Waugh and Lafford (2000: 272), markedness is understood as an “asymmetric relationship between two choices” which can be found in “all areas of morphology.”

<sup>7</sup> These languages were the following: Anejom, Bardi, Breton, Cirecire, English, Estonian, Finnish, Georgian, Greek, Hausa, Hebrew, Hungarian, Ilocano, Japanese, Jaqaru, Lakhota, Luganda, Maipure, Mandarin Chinese, Māori, Marathi, Nelemwa, Slovak, Spanish, Swahili, Telugu, Tibetan, Tzotzil, Wichí and Zulu.

<sup>8</sup> More specifically: Afro-Asiatic, Arawakan, Australian, Austronesian, Aymaran, Dravidian, Japanese, Kartvelian, Khoisan, Matacoan, Mayan, Indo-European, Niger-Congo, Sino-Tibetan, Siouan and Uralic.

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occurrence of exocentrism in the world's languages suggests "a relatively strong position of figurativeness in natural languages" on the one hand, and a tendency towards a more speaker-friendly economy of expression (as opposed to a more listener-friendly clarity of expression).

Furthermore, in some languages – such as Turkana and Kayardild – exocentric compounding is the norm, with only very few endocentric examples (Bauer 2008: 54). In Italian, exocentric compounding of the [VN] type is the most productive sort (Scalise et al. 2009: 50). With respect to the compounding pattern referred to as *bahuvrihi* in the literature (i.e., "person/thing that has X", where X is the property described by the compound), Bauer (2008: 55) maintains that it seems to be near-universal (see also Barcelona 2008). Many scholars (e.g., Bauer 1978, Jespersen 1954, Marchand 1960) have noted that *bahuvrihis* are based on a simple PART FOR WHOLE metonymy – in fact, Bauer (2008: 59) is of the opinion that such compounds should be treated as endocentric. Needless to say, the ubiquity of metaphor and metonymy in compounding is by no means surprising if one considers metaphorical and metonymical thinking as a normal, everyday ability of humans. As emphasized by Langacker (1987), Talmy (1988) and Croft and Cruse (2004) among others, both metaphor and metonymy can be considered as a type of construal operation, and as such, a certain way of interpreting/conceptualizing the world around us. What this implies, therefore, is that the use of and reliance on conceptual metaphors and metonymies in word formation must also be an absolutely natural process.

It has also been demonstrated by Benczes (2006) that such expressions can be analyzed remarkably well within a cognitive linguistic framework. The use of metaphors and metonymies in novel compound formation opens up a limitless supply of innovation and creativity in novel word-formation, as such expressions make use of the creative associations that exist between concepts; associations based on similarity, analogy or contiguity. Following Benczes, metaphorical and/or metonymical compounds will be termed here henceforth as "creative compounds".

### 3 Creativity at work

Benczes (2006) devotes a whole chapter to the discussion of one particular type of creative compound – instances where the second constituent is metaphorically conceptualized by the first constituent. What this implies is that in all such creative compounds the first constituent represents the source domain, while the second constituent represents the target domain of the metaphorical relationship. While previous accounts (see, for example, Downing 1977 and Warren 1978) have mostly relegated this type of compound formation into one large group, Benczes has demonstrated that such compounds show a remarkable variety of complexity in their analyses, depending on the metaphorical relation between the entities denoted by the participating nouns of the compound. Benczes comes to the conclusion that compounds based upon a metaphorical relation between the two participating constituents of the compound represent a natural, although highly creative process of word formation rooted in our ordinary – largely metaphorical – conceptual system.

An intriguing and highly representative example of the above statement is provided by the compound *helicopter parent* ("a parent who takes an excessive and overprotective interest in the life of his or her child, esp. with regard to education"; *OED*). According to the *OED*, the first citation of the expression is from 1989; it was added to the online version of the dictionary in 2007. There are plenty of webarticles that are concerned with the (mal)practices

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of *helicopter parents*,<sup>9</sup> and one of the main characteristics that nearly all of the articles mention is that such parents “hover” over their children,<sup>10</sup> which indicates that the metaphor is still quite alive in people’s conceptualisations. The image of a hovering helicopter implies that there is constant control over the child (although there is no direct interference in the child’s life). Helicopters are generally noisy, so their constant presence can be a source of annoyance to those on the ground – this negative implication is also carried into the semantics of the compound, which is labelled as “depreciative” in the *OED*. The helicopter metaphor also insinuates that the child’s life is conceptualised as a journey, where the child is travelling along a road (over which the “helicopter” parent hovers).

The ease by which we are able to create novel metaphorical compounds on the basis of already existing ones is exemplified by *lawnmower parent*, *bulldozer parent* and *snowplow parent* – all of which refer to parents who not just simply watch over their children’s lives (cf. *helicopter parent*), but directly interfere in them by clearing all the obstacles out of their children’s way (but by doing so they also deprive their children of learning to cope independently with challenges they might face in life).<sup>11</sup> What is fascinating about these more recent expressions is that their motivation can be traced back to the still active metaphorical basis of *helicopter parent*, i.e., parents conceptualised as vehicles. However, as parents nowadays take a more pro-active role in their children’s lives, the image of a passive helicopter does not fit the bill, and, therefore, a more apt vehicle needs to be selected – hence *lawnmower*, *bulldozer* or *snowplow*. Consider the following quote from a former school principal: “Today’s parents are not just ‘helicopter parents’ ... They are a jet-powered turbo attack model.”<sup>12</sup> The LIFE IS A JOURNEY metaphor is reinforced in all three compounds – whereby the machines cut, bull-doze or clear the obstacles (respectively) out of the way for their children. All three expressions are depreciative, similarly to *helicopter parent*; however, in these cases the pejorative sense can be traced back to our common knowledge of these machines – namely that they are big, sturdy and dangerous for those who get in their way (i.e., teachers, educators, etc.).

The compounds examined above are clear demonstrations of the fact that just because an expression is metaphorical, it does not necessarily have to be unanalyzable or opaque. On the contrary – not only are speakers capable of establishing and reinforcing the motivation for these expressions (see for example the remark of the former school principal quoted above), but are also able to create further expressions on the basis of the same general and underlying metaphor. Nevertheless, it might be argued that the reason why speakers have absolutely no trouble in understanding these compounds and exploiting their metaphorical potential is because they are all “endocentric” – after all, a *helicopter parent*, a *lawnmower parent*, a

<sup>9</sup> A relatively recent article that sums up the main characteristics of helicopter parents is “The seven myths of helicopter parenting”, by Katie Roiphe, 31 July 2012. (<http://www.slate.com>; accessed 20 March 2013).

<sup>10</sup> See, for example the following quote: “Parents of millennials have been obsessive about ensuring the safety of their children, Howe said. When the first wave was born in the early 1980s, ‘Baby on Board’ signs began popping up on minivans. They were buckled into child-safety seats, fitted with bike helmets, carpooled to numerous after-school activities and *hovered over* by what Howe describes as ‘helicopter parents’.” (Don O’Briant, “Millennials: The Next Generation”, *The Atlanta Journal and Constitution*, 11 August 2003 (<http://www.lifecourse.com>; accessed 20 March 2013; emphasis added).

<sup>11</sup> A summary of these novel coinages can be found in an article posted on the website of the American Association of College Unions International, <http://www.acui.org>: “Helicopters, snowplows, and bulldozers: Managing students’ parents”, by Mark Taylor (accessed 20 March 2013).

<sup>12</sup> Quoted in Elizabeth Kolbert, “Spoiled rotten: Why do kids rule the roost?”, *The New Yorker*, 2 July 2012, (<http://www.newyorker.com>; accessed 20 March 2013).

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*bulldozer parent* and a *snowplow parent* are all hyponyms of the second (i.e., head) constituent. Consequently, in order to support the idea that the endocentric–exocentric distinction is not a viable approach to the study of the semantics of English compounding, we need to find an “exocentric” compound that is both analysable and transparent for speakers.

Such a case is provided by *couch potato* (“a person who spends leisure time passively or idly sitting around, esp. watching television or videotapes”; *OED*), the semantics of which is based upon a complex interplay of metaphors and metonymies. With regard to the modifier, *couch*, it can be claimed that it is in a metonymical relationship with the activity itself (watching television from the couch), via the OBJECT INVOLVED IN THE ACTION FOR THE ACTION metonymy. It is also plausible to maintain that the compound as a whole evokes the metaphorical image of an immobile, passive person sitting before the television (via the PEOPLE ARE PLANTS metaphor, which carries the notion of immobility within itself, as plants are unable to move). The head element, *potato*, is quite rich in its metaphorical and metonymical utilizations. First, it can stand for the food that is consumed in front of the television (a potato-based snack, such as chips), resulting in the MATERIAL FOR OBJECT metonymy (potato for chips). This metonymical relationship, however, is the source of a further metonymy: chips can be considered as typical food consumed in front of the television, which means that chips stands for any kind of snack eaten before the television (via the MEMBER OF A CATEGORY FOR THE CATEGORY metonymy). Second, *potato* can also stand for the person who is eating it – via the OBJECT INVOLVED IN THE ACTION FOR THE AGENT OF THE ACTION metonymy. But the real beauty of the head element is that it evokes a further metonymy, namely CAUSE FOR EFFECT. Eating too much fatty food results in surplus fat, which results in the metaphorical relationship between the potato on the hand and the person on the couch – the agent of the action – on the other. The motivation behind this cognitive process is evident: an overweight person with excess fat resembles the sturdy, round shape of a potato.

The above analysis can, of course, be called into question on the grounds of it being a case of “armchair linguistics”, and therefore not being relevant to the main issue at hand (i.e., discarding the endocentric vs. exocentric distinction). Nevertheless, two pieces of evidence can be put forward to indicate that *couch potato* is indeed transparent and analysable for speakers. First, if one searches for *couch potato* among Google Images, there is an abundance of cartoons and illustrations depicting the following: 1) overweight people before the television (holding or eating a variety of unhealthy snacks); and 2) human-like potatoes with a face, arms and legs, sitting and eating before the television. The images point to the fact that the metaphorical conceptualisation of passive, immobile people likened to potatoes (i.e., PEOPLE ARE PLANTS) is very much alive in our cognition, as well as the consequences of eating too much food before the television (i.e., becoming overweight). Second, the original compound *couch potato* has served as the analogical basis for a further creative extension, *cot potato* (“an infant or toddler who spends a great deal of time watching television”; *Wordspy*). This recent coinage is also based on the metaphorical basis of *couch potato*, inheriting some of its metaphorical and metonymical relations, but also deviating in meaning from the original expression to some extent (depending on the semantic content of the modifier constituent).

Accordingly, the meaning of *cot potato* can be accounted for with a type of blend-based analysis, a so-called “mirror network”, where there is one single organising frame that

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structures the generic space, the inputs and the blend (Fauconnier & Turner 2002).<sup>13</sup> In the case of *cot potato* one of the input spaces is a baby/toddler before the television, while the other input space is *couch potato* (see Figure 1). What this more recent addition to the English language testifies is that in order to understand its meaning, one has to be familiar with the original expression of *couch potato*, but, at the same time, the hearer/reader has to adjust the meaning of the original compound as required by the first constituent of *cot potato*. At this point it needs to be emphasized that the constituents of a compound do not indicate the concepts that form the inputs to the blending process: the idea that conceptual integration involves a linking of counterparts, and that the formal expression names or indicates the appropriate counterparts is flawed (Turner & Fauconnier 1995). Rather, the constituents form “prompts” (ibid.) for the hearers, thus enabling them to build the conceptual structure that the compound itself refers to. This view is reinforced by experimental evidence as well (Costello 2002, Lynott & Keane 2003): when a novel compound is coined, it is not the communicative precision that influences the selection of the constituent nouns, but the defining properties of the categories themselves – that is, which noun is able to evoke the most productive semantic network. Therefore, which elements of the blended structure become selected as the formally coded constituents of the compound is extremely crucial for future interpretation.

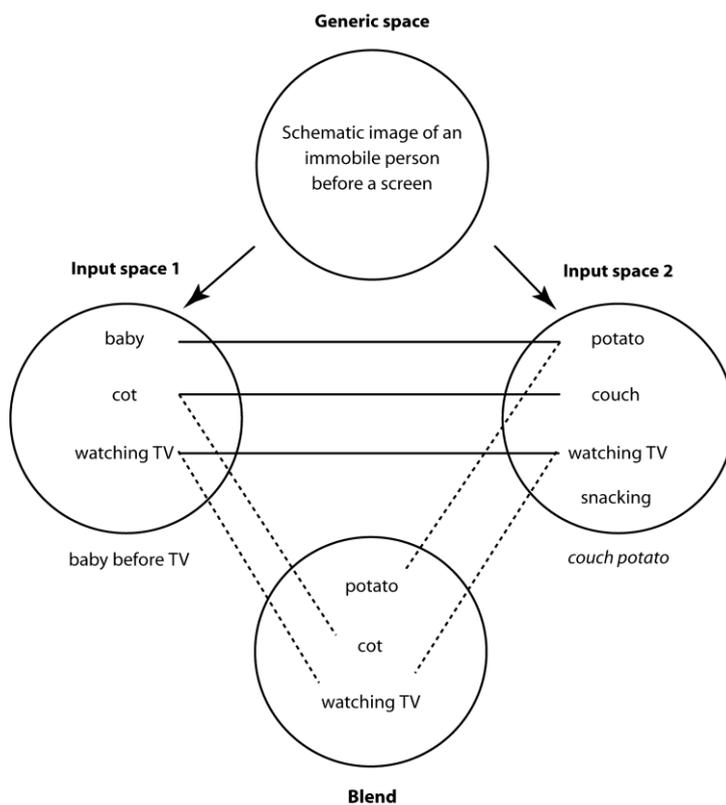


Figure 1: Blend-based analysis of *cot potato*.

<sup>13</sup> Blending theory has already been applied rather successfully within cognitive linguistics to account for the meaning of noun–noun combinations (see, for example, Coulson 2000, Fauconnier & Turner 2002, Benczes 2006, 2011). Schmid (2011) investigates the general applicability of blending theory with regard to novel noun–noun compounds, and based on his results comes to the conclusion that blending is indeed a viable approach to such formations – and possibly to word formation in general.

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Turning back to the blend analysis, *cot potato* is analogous to *couch potato* in the sense that the first constituent is also a location, similarly to couch in *couch potato*, but at the same time *cot* metonymically taps into the domain (or frame) of babies/toddlers (the cot being a usual location of theirs). Based on the correspondences within the blend network, the blended concept “inherits” the PEOPLE ARE PLANTS metaphor (the metaphorical image of a passive, immobile potato watching TV), and the OBJECT INVOLVED IN THE ACTION FOR THE ACTION metonymy (i.e., the cot). However, the semantics of *cot potato* does not necessarily require either the OBJECT INVOLVED IN THE ACTION FOR THE AGENT OF THE ACTION metonymy (i.e., the potato-based snack standing for the person who is eating it) or the CAUSE FOR EFFECT metonymy (i.e., eating too many snacks make us overweight) – because babies/toddlers cannot feed themselves (this feature cannot be found in the Wordspy definition either). Note, however, that on the basis of the meaning of *couch potato*, these latter metonymies can be called forth anytime within the meaning of *cot potato* if required (i.e., the blend can be “run”), and imply the danger of infants becoming overweight later on (due to simply watching too much television instead of engaging in active play) – as exemplified in the following quote: “The book’s author, Lucy Jackson, argues that modern children spend most of their lives strapped into buggies or sitting square-eyed and round-shouldered in front of the telly. This, she contests, leaves toddlers unfit and often overweight. ... But are toddlers really in danger of becoming cot potatoes?”<sup>14</sup>

#### **4 Compositionality and creativity revisited: Implications for the mental lexicon**

Nevertheless, I do not wish to claim here that there is no difference with regard to semantic complexity between – for example – a metonymical or a metaphorical compound. In fact, just the opposite holds true. As Libben et al. (2003) have pointed out, the semantic complexity of a compound does affect processing times. According to the results obtained from psycholinguistic experiments, the processing of a compound with a non-transparent head, such as *jailbird* or *fleabag*, took longer than the processing of those compound expressions where the modifier was non-transparent (and the head transparent), as in *godchild* for instance. Such a result implies that there must be a connection between transparency on the one hand and the place and type of cognitive operation (metaphor or metonymy) within the compound. This brings us to the question of how can transparency of meaning and linguistic creativity (that is, the production and use of metaphorical and metonymical compounds) be reconciled and accounted for within a cognitive linguistic framework.

A possible answer is provided by applying the notion of constructional schemas, which are able to capture the commonalities of specific expressions at any linguistic level. Accordingly, endocentric and exocentric noun–noun compounds are based upon the same constructional schema ([NN]), but, as Langacker (2000) points out, even constructional schemas are grouped around prototypes. Within this complex network, the constructional schemas represent various degrees of abstraction, and they are linked to one another through relations such as elaboration (ranging from more general to more specific constructional schemas) and extension (ranging from non-metaphorical schemas to metaphorical/metonymical schemas).

<sup>14</sup> Polly Ghazi, “Encounters: No more cot potatoes”, *The Observer*, 2 May 1993. (Source: Wordspy)

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Accordingly, it can be claimed that any noun–noun compound, whether endo- or exocentric, is on the same degree of elaboration; i.e., it can be characterized by the [NN] schema. However, [NN] compounds can represent various degrees of extension, depending on the cognitive operations that act upon the meaning of the expression. Therefore, the notion of degree of extension is synonymous with the concept of degree of creativity among creative compounds: the more extended a compound, the more imaginative, associative thinking is required from the listener to arrive at the compound’s meaning. Consequently, creative extension can be correlated with transparency of meaning. Metaphorical and/or metonymical compounds represent various levels of semantic transparency depending on which constituent is affected by metaphor or metonymy. As mentioned before, the semantic complexity of a compound does affect processing times – in other words, the creative extension of *jailbird* or *fleabag* is greater than that of *godchild*, even though all three represent the same degree of elaboration (Libben et al. 2003). Based on the results mentioned above, it can be hypothesized that a compound with a metaphorical or metonymical head is more extended than a compound with a metaphorical or metonymical modifier. However, it should be borne in mind that even further distinctions of extension (and transparency) can be established even within one single class of creative compounds if further factors, such as lexicalisation, are also considered (cf. *honeymoon*, *babymoon* and *familymoon* as mentioned above).

The major benefit of adopting Langacker’s (2000) idea of extension and elaboration in the treatment of endocentric and exocentric compounds is that it manages to capture the commonalities inherent in noun–noun compounds, regardless of their semantic makeup. Nevertheless, it also brings into focus the gradual nature of the semantic complexity that characterizes this type of English word-formation process. Accordingly, the first group of compounds analysed in the previous section – *helicopter parent* and its variants – represents a type of compound which is more extended than *apple tree* (although both are on the same level of elaboration). Although *helicopter parent* would have fallen under the “endocentric” label in traditional approaches, its meaning is based upon elaborate metaphorical conceptualisations, and, consequently, falls further away from prototypical endocentric cases. *Couch potato* and *cot potato* are even further extended in the Langackerian sense, in that the target domain remains linguistically “unexpressed” within the expressions – due to which, therefore, they can be considered as prototypical cases of “exocentric” compounds from a traditional point of view. Nevertheless, as the analyses indicated, speakers have no problems with understanding the metaphorical motivations of such expressions (and create further, analogous terms), which implies that such compounds should rather be treated as less prototypical examples of routine English compounding, and not as exceptional or non-rule-governed material.

Therefore, what is claimed here is that the endo- and exocentric distinction as a means of classification is very problematic. It is suggested instead that compounds should be placed along a cline of extension, with prototypical cases of compounding such as *apple tree* at one end of this cline and metaphorical (and metonymical) compounds such as *couch potato* at the other end. It is very likely that most compounds will fall somewhere in-between: as underlined by Langacker (1987), linguistic phenomena are more likely to show partial compositionality

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than to be fully compositional.<sup>15</sup> This suggestion, however, does not mean that the notions of “modifier” and “head” should also be discarded in the morphological literature – both are intrinsic to the semantics (and the syntax) of compounding from a cognitive linguistic and a psycholinguistic perspective as well.

Psycholinguistic research, for instance, is especially useful in providing answers to some of the questions that this novel approach entails – such as how can the different degrees of extension be distinguished with regard to semantic compositionality. Recent experiments on compound representation seem to fully support the idea that compounds such as *helicopter parent* or *couch potato* are meaningful and motivated to speakers. According to Gagné (2009: 265), compounds are “represented as morphologically complex at some level of representation because even semi-opaque compounds facilitate responses to constituents”.<sup>16</sup> Furthermore, in more recent experiments, El-Bialy and colleagues (2013) have come to the conclusion that semantic priming occurs in fully opaque compounds as well.

Such results chime in with the theory of Maximization of Computational and Storage Efficiency that seeks to provide an explanation for how compound words are represented in the mental lexicon (Libben 2006: 3-6). As suggested by recent psycholinguistic evidence, the mind seeks to both store and compute as much as possible, regardless of the semantic makeup of the compound, in order to attain as much information about the composite item as possible. This means that “semi-opaque” and “opaque” compounds are also processed both as a whole and in terms of their constituents, pointing to the meaning composition model as the most viable explanation for the mental lexicon’s architecture (Ji et al. 2011).

Therefore, psycholinguistics has come more-or-less to the same conclusion that cognitive linguistics has been advocating for a long time now and which has been hopefully demonstrated in the analyses of the creative compounds in section 4 as well – namely, that language users do make sense of seemingly “unanalyzable” phenomena and routinely use them to create novel expressions. This raises the possibility that so-called “opaque” (or “semi-opaque”) compounds simply do not exist, as we strive to make sense of (and place meaning into) linguistic units all the time – however complex they might be. Nevertheless, psycholinguistics still lacks an explanation for creative language use, which involves ad hoc, contextual and analogical information as well that is “rooted in long-term memory or the immediate physical or linguistic context” (Gerrig & Gibbs 1988: 14). Any account of the mental lexicon must necessarily be able to explain and accommodate examples such as *helicopter parent* and *cot potato* among others; it is very much hoped that future lines of research will properly address this issue.

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<sup>15</sup> In line with this reasoning, Dirven and Verspoor (1998) discard the traditional dichotomy of endo- and exocentric compounds and argue instead for a cline of transparency of meaning. However, they treat metaphorical and metonymical compounds as “darkened” constructions, hence semantically opaque.

<sup>16</sup> It needs to be stressed that there has still been very little done on the representation of “opaque” or “semi-opaque” compounds in psycholinguistics (and much, much less on the production of such types). One of the greatest limitations of psycholinguistic research is its insistence on the terms “opaque” and “semi-opaque” for compounds such as *god-child* and *fleabag*, respectively – especially in view of the fact that experiments indicate that such expressions are motivated (and hence not opaque) for speakers.

## 5 Conclusions

This paper has strived to demonstrate that not only are metaphorical and metonymical compounds a staple part of our everyday language use, but they are also analyzable (to various degrees) for language users and can serve as a basis for further, analogical coinages. This state of affairs necessarily brings forth the question of compositionality, which, especially within the realm of noun–noun compounds – can only be approached flexibly. This flexibility needs to be generalized over both “endocentric” and “exocentric” compounds alike, challenging in earnest the viability of this distinction.

As the analyses of examples such as *helicopter parent* and *couch potato* indicated, speakers have no problems with understanding the metaphorical motivations of such expressions, which implies that such compounds should be treated as less prototypical examples of routine English compounding, and not as exceptional or non-rule-governed material. Therefore, the paper has argued that the traditional endo- and exocentric distinction as a means of classification needs to be abandoned, and has proposed that from a semantic point of view compounds should be placed rather along a cline of extension, with prototypical cases of compounding such as *apple tree* at one end of this cline and metaphorical (and metonymical) compounds such as *couch potato* at the other end. Therefore, the more extended a compound, the more imaginative, associative thinking is required from the listener to arrive at the compound’s meaning. Consequently, creative extension can be correlated with transparency of meaning. At the same time, extension corroborates with elaboration in establishing analogical patterns: *couch potato* has yielded the [N *potato*] schema, which represents a greater degree of elaboration and extension than the simple [NN] schema.

The major benefit of adopting Langacker’s (2000) idea of extension and elaboration in the treatment of the semantics of noun–noun compounds is that it manages to capture the commonalities that are inherent in them, regardless of their semantic makeup. Nevertheless, it also brings into focus the gradual nature of the semantic complexity that characterizes this type of English word-formation process. Such a conclusion, needless to say, poses further challenges for linguists, especially with regard to the interplay between extension and elaboration. The resolution of such issues might gain considerable impetus from psycholinguistic research, which has recently turned towards the processing and representation of less prototypical compounds (labelled as “semi-opaque” and “opaque” in the literature). Accordingly, such compounds are indeed decomposed to some degree – which fully supports the main claims made in the present paper as well, namely that we routinely search for meaning everywhere, regardless of the semantic makeup of the composite item.

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