Blending Theory and the Semantics of Compounds

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Abstract

Since Bloomfield (1935) separated compounds into two classes, ‘endocentric’ and ‘exocentric’, the latter class has been left aside in many analyses. Is it necessary to continue to use this terms? According to this analysis, it is not. Compounds show either a straightforward, metaphorical or metonymical meaning, neither of these means that there is no head inside of the compound. One way to analyze compounds that have been classified as ‘exocentric’ is through blending theory, as already done in Benczes (2006). These compounds share a metaphorical or metonymical nature that will be explained throughout. Blending theory also helps explain the semantic relations there are between the modifier and the head of the construction. This will be studied by analyzing various compounds that contain the word milk and that show different relations and meaning. This analysis will also help understand if a metaphorical compound is semantically opaque, which according to this dissertation, is not the case.

Keywords: blending theory, endocentric, exocentric, metaphor, compounds.
1.0 Introduction

In this dissertation I will examine the use of blending theory to understand the metaphorical nature of semantically opaque compounds. Semantically, compounds have been identified as either endocentric, whose head is present inside the compound, as in textbook which is a type of book; or exocentric whose head is empty. An example of exocentric would be skinhead, which is not a type of head, and is in fact a person, although this is not expressed inside the compound (Plag, 2003). Things are, however, not as black and white as they seem to be. To begin with, there are compounds, like blackbird, that is believed to be endocentric, although it does not refer only to a bird that is black (Plag, 2003). In addition, Bauer (2008a) analyzed several seemingly exocentric compounds reaching the conclusion that some of them were not exocentric at all: “It seems that many such cases can be treated similarly: they show lexicalization; they show grammatical restructuring; they show a figurative interpretation” (p. 9). Bauer cites birdbrain as an example due to its metonymic meaning (p. 7). Dirven and Verspoor (2004) also concluded that semantically opaque compounds are derived metonymically and metaphorically (p. 58), which is the path this dissertation will take. One of the questions this dissertation revolves around is how necessary it is to continue to use the terms ‘endocentric’ and ‘exocentric’, which show several problems to be discussed. This study shows ultimately that it is not necessary to continue using them. Also, does semantic opacity always imply metaphors? If there is actually semantic opacity in compounds, the answer would be yes. Metaphor and metonymy do not imply semantic opacity. There are, however, different degrees of transparency.

Blending theory, as a part of cognitive linguistics, has somewhat been used to understand compounds and their semantics meanings and relations. The most meaningful studies are those from Coulson (2000) and Benczes (2006). With blending theory, the compound is represented with mental spaces that interconnect with each other and the blend: “that is, each noun evokes a space structured by some appropriate frame, and the meaning of a whole is a successful blending of the two spaces involved” (Sweetser, 1999, p. 135). The blend is what connects the two elements from the compound, and what ultimately primes the meaning of the construction (Benczes, 2006).

For this dissertation, I will investigate some ‘milk compounds’: milk bottle, milkman, milkmaid, milk-float, milk-fever, milk-tooth, milk-weed, milk-tart-, milk-leg, milk-round, and buttermilk. The reason I have chosen these kind of compounds, is because even if they all share the word ‘milk’, they do not share the same semantic relations. One thing these compounds have in common are that they all present associative attribution, which happens when the head
is associated with the other element in one way or another (Giegerich, 2015), like in *tooth-brush*, where brush is associated with teeth. The way to understand the nature of this attribution in every one of the constructions is through blending theory. Blending theory demonstrated that not only each one of the elements can be treated metaphorically, but the different relations and connections inside of the blend help prime the meaning. It also helped to understand the relation milk has with each of its counterparts in the different compounds.

2.0 Literature Review

2.1 Classical views of compounding

First of all, I will discuss compounds, their different classifications and the different studies that exist about exocentric compounds. Furthermore, I will study how metaphor has helped to understand better the semantics of compounds. And finally, I will explain blending theory as the methodology for this dissertation. To begin with, what is exactly a compound? Most of the definitions revolve around the same idea. For this dissertation, I will make use of Benczes (2006) definition, whereby “a compound is a word that is made up of two or more elements, the first of which is either a word or a phrase, the second of which is a word” (p. 8). In a compound, such as *toy factory*, the second element is known as the head of the construction, and as Selkirk (1982) noticed, most English compounds are right-headed constructions. This was deduced because English is a right headed language, but also because the right hand element determines the category of the whole (Williams, 1981). Semantically, the first person who analyzed and classified compounds was Bloomfield (1935), where he stated that when a noun is a hyponym of its head, is endocentric. For instance, *blackbird* is a type of bird. A compound is exocentric if the head is empty, like in *redneck*, which does not define a type of neck, but a type of person. These ‘exocentric’ compounds, however, were not thoroughly studied for some time and are still regarded as exceptions. Williams (1981) gave the definition of a head in a compound: “the head of a compound has the same properties as X” (248). Nonetheless, what exactly does it mean if an exocentric compound does not have a head? While its significance is related to being a *type of something*, people have thought for too long that the meaning of these compounds is outside of the compound itself.

Jespersen (1942) thought of semantics as an important quality to identify compounds, instead of orthography or stress. He classified compounds into six categories and recognized that there are semantic patterns. His categorization, as presented by Benczes (2006), is “1) AB means B modified by A. 2) AB means A modified by B. 3) copulative compounds. 4)
appositional compounds. 5) exocentric compounds. 6) two elements are joined by a
preposition. He had some subdivisions as well” (p. 18). However, he also added: “and we may
perhaps say that we have a compound if the meaning of the whole cannot be logically deduced
from the meaning of the elements separately” (Jespersen, 1942, p. 137), which can still hold
for semantically opaque compounds, but not for constructions with transparent meaning.
Hatcher (1960) criticized harshly the logical consistency of Jespersen’s classification, saying
the fact that he found some compounds which did not belong to any category was due to him
not classifying the compounds correctly. Hatcher (1960) finally gave her own classification,
which consists of four types that differ in the semantic relations between the elements. She
proposed “that the main areas, constructed according to criteria, of pure relationships, be
divided, first, exclusively according to reference- which means, of course, the reference of both
A and B” (p. 366). As an example, one of her main categories is “A is somehow, to some
extent, contained, comprehended in B” (p. 363-364).

Moreover, Marchand (1960) added to the study of compounds the terms determinant
and determinatum. In English, the determinant precedes the determinatum. As to the semantics:
“the determinatum represents the element whose range of applicability is limited by the
determinant” (Stekauer, 2000, p. 32), and, grammatically, the determinatum would be the
dominant element. Marchand expresses special attention to what he calls a compound
determinant with a zero determinatum, where there seems to be no determinatum. These are
the so called ‘Bahuvrihi’ compounds, with examples like redskin, birdbrain and pickpocket.
Bahuvrihi is a Sanskrit term sometimes used as a synonym of exocentric, or as a subdivision
of exocentric compounds (Bauer, 2008a). He also classified ‘exocentric’ compounds into five
categories. Marchand’s classification “is somewhat confusing, however, as there is no main
linguistic consideration –semantic, syntactic or morphological- on which his classification is
based” (Benczes, 2006, p. 18). Adams (1973) analyzed and classified nominal compounds. She
realized what were some of the problems with her classification, which include compounds
that can have different meaning relations, or that it is the person who sometimes attributes a
meaning to a compound. Adams (1973) also added a subclass of metaphorical compounds for
compounds like egghead.

Transformationalists try to explain compounds with phrases that compose the
representation of compounds, these representations suffer transformations and deliver the
compound (Graña López, 1994). One of the transformationalists to have this view was Lees
(1966), nonetheless there are several critiques to his theory, one of them being “quite
unrestricted since it is made up of a series of ‘ad hoc’ transformation that operate freely” (Graña López, 1994, p. 151).

To continue with generativism, Levi (1978) studied with more depth the semantics of noun-noun compounds. To avoid leaving the random transformation processes that came with Lee’s’ theory, Levi focused on “predicate nominalization and predicate deletion” (Benczes, 2006, p. 26). In car thief, steal would be the concealed part of the compound (Ten Hacken, 2011). There are nine recoverably predicates, and they help to understand the compounds better. All the same, Taylor (2003) wrote that “nominal compounds may be open to different representations” (p. 94), and this way alligator shoes are shoes made from alligator skin, not shoes for alligators to use (Taylor, 2003). Levi barely touched exocentric compounds. In contrast, she did write that there is a group of compounds “derived by BE Deletion composed of those regularly used in a metaphorical sense” (Levi, 1978, p. 92). Levi did not “explain how the metaphorical or metonymical interpretation of exocentric compounds is possible” (Benczes, 2006, p. 28).

In regard to lexicalist approaches, Allen (as cited in Ten Hacken, 2011) proposed two rules for compounds:

“IS A CONDITION In the compound [X Y]Z, Z ‘IS A’ Y.

VARIABLE R CONDITION In the primary compound [X Y]Z, the meaning of X fills any one of the feature slots of Y that can be appropriately filled by X”.

(Ten Hacken, 2011, p.72)

Allen (1978) also said that it is semantics that help deduce the predicate.

Selkirk (1982) generated a rule to explain how nominal compounds were generated:

N \rightarrow \{N A V P\}N (p. 16). She did somewhat touch on exocentric compounds, explaining they were structured in the same way as endocentric compounds were, and that their nonheadedness was a problem of their semantics.

Moreover, in pragmatics, one of the most important accounts on compounding was that of Downing (1977), who analyzed compounds that had not yet been lexicalized. What matters for this study, is that she identified that compounds semantics “may be extended through processes such as metaphor and metonymy” (Downing, 1977, p. 819). In addition, Warren (1978) studied the semantics of the relations between the elements of nominal compounds, so she would be able to arrange them according to the new categories she found.

Jackendoff’s (2016) studies include pragmatics and the contextual background, and how he approached compounds. In his findings, he writes that “exocentric (or bahuvrihi)
compounds, have a tacit semantic head, and sometimes $N_2$ is metaphoric” (p. 16), which is a view I do not share, as a lot of times $N_1$ is metaphorical.

In lexicalism, Lieber (2016) explained that words generally have two basic parts: “the semantic skeleton which contains those aspects of lexical and affixal meaning that are syntactically relevant and a semantic body, which contains all aspects of meaning that are encyclopedic in nature” (p. 38). Lieber also adds that simplex and complex words can have metonymic readings, as pig can refer to an unclean person, and an airhead to a person who has nothing on their head. This would not make a difference in analyzing endocentric and exocentric compounds, as it does not make a difference between simplex and complex words. Again, the analysis I will try to provide, will show how both members of the semantically opaque compound are equally important in producing the metaphoric meaning it has, which makes them slightly different from simplex words.

### 2.2 Associative attribution

Giegerich (2015) makes an important difference between adjectives and nouns in compounds and phrases, which exhibit associative or ascriptive attribution. To explain the difference between the two, I will use the example of toy factory. Leaving stress in compounds and phrases aside, there are two ways in which toy factory can be understood. If the factory is a toy, then it has ascriptive attribution. If, however, the factory produces toys, then it has associative attribution because it is a factory that is associated with toys (Giegerich, 2015). Associative attribution is mostly expressed by nouns, although some adjectives have been known to manifest it as well. So, tooth-brush is a brush associated with teeth. And, also, tooth-brush is a type of brush, which makes it, according to Bloomfield standards, endocentric. However, it would be foolish to assume that associative attribution noun-noun compounds are all “endocentric” or transparent. As Giegerich (2015) has written: “Associative attribution simply has more room for specific, non-inferable, (non-transparent) interpretations than ascriptive attribution has” (63). If the compound is milk-tooth, it is a type of tooth, but the association that milk has with tooth is not transparent. The compounds to be analyzed in this dissertation present associative attribution.

### 2.3 Exocentric vs Endocentric

Although the terms ‘endocentric’ and ‘exocentric’ have been used in formal linguistics since their introduction with Bloomfield (1935), I will not employ them for this dissertation. These terms present a variety of problems. First of all, and as we have seen, because of the
distinction, very few analyses have been made on the compounds that were identified as ‘exocentric’. They were mostly mentioned as marginalized cases. Furthermore, even though ‘exocentric’ compounds are supposed to be the exception, they are prevalent in several languages (Stekauer et al, 2012). “Turkana is cited as a language which has exocentric compounds but no or few endocentric compounds” (Bauer, 2008b, p. 54), which means that these compounds should not be left as marginalized.

In addition, what does exocentric mean? Since Bloomfield, the term has been used for “1) a compound that does not have a (semantic) head or 2) a compound whose head falls outside of the construction” (Benczes, 2015, p. 57). Benczes (2015), however, says that all ‘exocentric’ compounds are either metaphorical or metonymical. This is not incompatible with the fact that these compounds can have a head as well, as they in fact do. Bauer (2008a) explained that when simple lexemes have a figurative meaning they are not treated as exocentric, and compounds should be treated the same way. Bauer (2008a) also reached the conclusion that some of the compounds known as ‘exocentric’ are not inside of that category. His account was that these compounds are sometimes treated as synecdoche, and this does not make them exocentric, and that other times they have a figurative meaning that is primed from the elements themselves. An example he uses is birdbrain, which is used as metonymy. He also mentions that this example does have a head, as bird modifies brain (p.7). To add to this, Benczes (2015) also discusses that figurative compounds can be easily analyzed and this means that they are not opaque. This would mean there are no exocentric compounds: “we strive to make sense of (and place meaning into) linguistic units all the time –however complex they might be” (Benczes, 2015, p. 16).

Dirven and Verspoor (2004) think is better to use a continuum, whereby “at the fully end of the continuum, they are transparent” (p. 58), like apple tree, and in the other the darkened compounds have a place. These constructions “get ‘entrenched’ so deeply in the language that are no longer analyzable” (p. 57). Blackbird would be in the middle, as it is “partially transparent if the components are analyzable” (p. 58). They also wrote that compounds are not transparent if metonymical or metaphorical processes are involved. Dirven and Verspoor (2004) do not explain exactly what constitutes a transparent compound or the various degrees of transparencies that exist. Also, they affirmed that only non-transparent compounds are metaphorical; nevertheless, according to Benczes (2006) metaphorical compounds do not necessarily imply they are non-transparent.

Benczes (2015) concludes that the difference one can find in compounds is whether they are creative or not. ‘Creative’ means that the construction uses metaphor, metonymy or
both. Inside of the ‘creative’ category: “metaphorical or metonymical compounds represent various levels of semantic transparency, depending on which constituent is affected by metaphor or metonymy”. So, blackbird, the example used to describe endocentric compounds, only accounts for it being a type of bird. If the term was semantically transparent, the type of bird it describes should be completely black, which is not the case, “actually, we do talk of brown blackbirds, which are in fact the females of the species” (Dirven and Verspoor, 2004, p. 59). While this explains one of the problems with the ‘endocentric-exocentric’ distinction, it also shows that it not 100% transparent.

Benczes (2006) analyzed and organized compounds regarding its compositionality, whether a compound is metaphorically based, or if its elements are metaphorically or metonymically driven. Her classification includes metaphor based compounds which have a metaphor-based modifier, a metaphor-based profile determinant and compounds that have both a metaphor-based modifier and profile determinant. She also has metonymy based compounds with the same sub-classifications and metaphor-metonymy based, again, with subdivisions. For this dissertation, I will regard compounds as to their relation with metaphor and metonymy as well. The only difference, however, is that while Benczes (2006) uses the word ‘creative’ to refer to figurative compounds, I will simply use ‘figurative’.

2.4 Cognitive linguistics

Blending theory is part of cognitive linguistics. Cognitive linguistics is different from the classical views I have laid out so far. To begin with, the basis of “Cognitive Linguistics is that the language system (…) is fundamentally determined by the language user’s cognitive abilities” (Heyvaert, 2011, p. 234). According to Langacker (1999), “cognitive linguistics identifies meaning with conceptualization” (p. 26). And, conceptualization relates to every single entity and type of mental experience, that can be further categorized in subtypes (Dirven and Verspoor, 2004). It should not be forgotten, however, that “language does not reflect the world objectively” (Benczes, 2006, p.44).

2.5 Metaphor and Metonymy

As Benczes (2006) has put into her writing “the notions of metaphor and metonymy are at the center of cognitive semantic theory” (p. 41). Metaphor and metonymy are considered important tools at creating classifications while trying to understand the outside world (Gyori, 2002). As Lakoff and Johnson (2003) wrote “The essence of a metaphor is understanding and experiencing one kind of thing in terms of another” (p. 5). Moreover, Lakoff and Johnson
explained that metaphor is not only a matter of words, because human thoughts are also structured metaphorically.

Structurally, a metaphor is how you understand one conceptual domain in terms of another one (Benczes, 2006). Lakoff and Johnson (2003), in their metaphor study, did not analyze the literature examples that have already been analyzed in different occasions, but sentences uttered in day-to-day situations. If talking about time, when uttering: “You’re wasting my time”, it is done in terms of money. Lakoff and Johnson (2003) when realizing how metaphors are embedded in everyday situations, introduced the notion of conceptual metaphors, where “a domain is understood in terms of another: Concept A is Concept B” (Benczes, 2006, p. 48). To explain the previous time sentence, the conceptual metaphor would be TIME IS MONEY.

Additionally, metaphor and metonymy have a source and a target. The source domain is what supports the literal meaning of the sentence, while the target domain is what the utterance is actually about. A metaphor has metaphorical relations between the conceptual domains, also known as mappings inside of cognitive linguistics (Croft & Cruse, 2004).

Metonymy is as important as metaphor in cognitive linguistics. The concept of metaphor and metonymy have the same basic definition, but the most important difference is how A and B are associated in the same domain or they are in the same idealized cognitive model (ICM) (Croft and Cruse, 2004). An ICM includes the encyclopedic knowledge and the cultural identity a person has, it is also not restricted to a “world” (Benczes, 2006). It is important to state that metonymy can be a part of a metaphor, and a metaphor can be part of metonymy (Croft and Cruse, 2004). Finally, we should not forget that “metaphor and metonymy can be considered as various kinds of construal operations, that is, mental processes that we employ for interpreting or conceptualizing the world around us in a particular way” (Benczes, 2011, p. 1)

2.6 Blending Theory

A way in which metaphors have been analyzed in cognitive linguistics is through blending theory. Not only metaphors, but compounds have also been analyzed with this theory, (Benczes, 2006; Coulson, 2000). Blending theory was first brought up by Fauconnier (1984), for understanding rhetorical devices, especially those with opacity. It aimed at explaining phrases like fake gun, as it is not merely an intersection. The main elements in the theory are mental spaces. Mental spaces are conceptual representations that depict what we think and speak, these are interconnected and can be modified as the person continues to speak or think
(Fauconnier & Turner, 2002). So, for example, if a sentence reads: “I am happy when I read”, the reader makes up two mental spaces one for happy, and one for when the person is happy. As already mentioned, mental spaces are interconnected and this is done by mapping, which is systematic (Sweetser, 1999). These mental spaces sometimes interact with each other creating a blended space, where there are aspects from each mental space and have “an emergent structure of their own” (Bences, 2006, p.53). In this way, Blending acts like a network. In fact, Fauconnier and Turner (2002) called this a conceptual integration network (CIN), it contains four spaces. Firstly, there are the two input spaces, which are partial structures that are formed by the mental space of the form to be analyzed; the cross-space mapping is counted as another space, which connects the counterparts of the inputs; the generic space contains what it is common between the inputs. Finally, there is the blend. Not everything goes into the blend, as this is selective. Also, the blend includes an emergent structure that is not in the inputs (Fauconnier & Turner, 2002).

Fig. 2.1 Blending theory (Fauconnier & Turner, 2002, p. 46).
The emergent structure can be generated by three processes. First of all, there is composition, where “elements from the inputs make relations available in the blend that did not exist in the separate inputs” (Fauconnier & Turner, 2002, p. 138). Second, completion when “blends recruit a great range of background conceptual structure and knowledge without our recognizing consciously” (p. 144). Finally, elaboration “develops the blend through imaginative mental simulation according to principles and logic in the blend” (p. 144).

Blending is not something that happens only in certain circumstances or analyses, as Benczes (2006) wrote, “blending is a routine cognitive process that is performed unnoticed on a day-to-day basis”. This is why when a person hears a metaphor or a compound, most of the time, they interpret it without a conscious effort. However, one should not forget that blends can be either entrenched or novel (Fauconnier & Turner, 2002). There are some optimality principles that Fauconnier and Turner (2002) wrote to constrain blends:

- Integration principle: the blend must constitute a tightly integrated scene that can be manipulated as a unit.
- Topology principle: relations in the blend should match the relations in the counterparts in the input spaces.
- Web principle: manipulating the blend as a unit must maintain mappings to the input spaces.
- Unpacking principle: given a blended model, the interpreter should be able to infer the structure of other spaces in the network.
- Good reason principle: if an element appears in the blend, there will be pressure to find significance for this element.
- Metonymy projection constraint: when metonymically related elements are projected into the blended space, there is a pressure to “shorten” the metonymic distances between them in the blend. (Benczes, 2006, p. 54)

Furthermore, there are five different types of blending that Fauconnier and Turner (2002) wrote about. First, there are Simplex networks, these can be explained easily with kinship terms, like father or daughter, if there is an integration network with names like Paul and Sally, a blend comes in where Paul is the father of Sally. “The blend integrates the frame and the values in the simplest way” (Fauconnier and Turner, 2002, p. 120). Next we have Mirror networks, where all spaces share an organizing frame. If there was a football game between two countries who are to confront each other again, there will be people who theorize about the outcome as it happened in the first game, for this the mirror network is used. When talking about conceptual metaphor, the blend used is the single-scope network, the two inputs
are for the source and the target domain. One of the input spaces is projected into the blend. In
double-scope networks the emergent frame of the blend is constructed by certain parts of both
source and target domain. For an example of multiple-scope networks, Fauconnier and Turner
(2002) use The Grim Reaper as it is constituted with multiple things from day to day lives.

Sweetser (1999) analyzed adjective-noun phrases with blending theory. One of her
inputs was that a person does not only need blending, in a process of studying compounds and
phrases, but also framing, active zones, profiling and construal, which are other elements from
cognitive theory. The frame network is generally a part of a conceptual integration network
where all the spaces share topology given by an organizing frame. The organizing frame
provides the topology for the blend. (Fauconnier and Turner, 2002). It is important that “In a
conceptual integration network over two inputs, the topology of the generic space is always
shared by all four spaces” (p. 164). The active zone refers to the specific place of the thing
referred. As an example, Sweetser (1999) uses a pencil, when talking about pencil-sharpeners,
a person knows it is not the whole pencil that goes into one. When a person speaks, the language
used can make the speaker and the listener focus in specific details of the scene, this is profiling.
Finally, construal refers to how each of the speakers sees the world in their own way.

3. Analysis

All the compounds to be analyzed in this section have associative attribution. Their
head is present on the right, and according to Bloomfield, they would be ‘endocentric’. In here,
I will try and show with blending theory how these compounds, even though they share the
same modifier: ‘milk’, have different ways in which they are associated with their heads.
Fauconnier and Turner (2002) analyzed three compounds with the word safe in dolphin-safe,
shark-safe and child-safe. Even though the same word is at the right of the compound, it has
different meanings and associations with the other element, and the way to understood the
relations between the elements of the compounds was to analyze them with blending theory.

3.1 Milk bottle: transparent, non-metaphorical.
To begin with, *milk bottle* is a compound that shows a direct and obvious associative attribution. And even though associative attribution is linked with non-transparent compounds, in this case the compound is not opaque.

![Diagram of milk bottle blend analysis]

**Figure 3.1** The blend analysis of *Milk-bottle*

*Milk bottle* is a transparent compound that does not show any type of figurative interpretation. As it can be observed, the right part of the compound shows a container, and the left part a liquid, which makes the connection between the two, straightforward. The blend merges elements from the input spaces. However, as discussed before, it does not blend all of them, as not all the connotations of the word “milk”, like its color, or where it comes from, are important for this blend to work.

Nowadays, *milk bottles* no longer carry only milk, as milk has other type of containers and is not delivered door to door in most places anymore. Yet, the shape of the *milk bottle* is still recognized as such, because it has a specific form. The type of bottles discussed for this compound are still called *milk bottles* now, even though they are sometimes used to hold flowers, pens or anything else that fits in it. In this sense, *milk bottles* is used as metonymy, where the working ICM is bottles. The metonym accesses the ICM through the whole for the part. There are plenty of examples of this kind of metonymy in English, because of how specific English can be (Benczes, 2006). One example of how this compound is still being used, even
though milk bottles do not carry milk anymore is: “now you can buy empty milk bottles at craft stores too”. However, the adjective “empty” does tell that milk bottles are still seen as milk containers.

3.2 Milk-tooth: metaphor based modifier

Although milk-tooth is not used often anymore in the English language (it has been replaced by baby-tooth), it is still used in German (Milchzahn) and the same concept is also applied in Spanish (diente de leche). This compound is also right-headed and fits into the concept “type of tooth”, except this time it is not transparent. Because of how little usage this compound has in modern day English, people have not heard of it, and when asked the meaning of the compound, they fail to recover it due to the lack of transparency. And even though it is still used in German and Spanish, people are not certain why these type of teeth are called this way. As a result, I will analyze the metaphor contained in this compound with two popular theories as to where milk-tooth comes from.

- Milk-teeth grow during the baby’s lactation period.
During the lactation period, babies acquire more nutrients, specially calcium, which helps babies grow their milk-teeth. The generic space that is common to both elements of the compound is the fact that calcium is a known element of teeth. It has long been believed that drinking milk gives people strong bones and teeth. And this is how <lactation> corresponds with <teeth>. Most importantly, this is a case of a metaphor based modifier, which means that the first constituent is the one which is understood metaphorically, in this case as a sign of nourishment. Tooth is not metaphorical and does not constitute part of the non-transparency of the compound.

**Figure 3.2** The first blend analysis of *Milk-tooth*
- **Milk-teeth are as white as milk**

![Diagram](image)

**Figure 3.3** The second blend analysis of *Milk-tooth*.

This time the first modifying element is also understood metaphorically, milk is not relating to the other qualities we have seen so far in this study. Instead, the metaphor is drawn from the color of it. This theory also takes into account the fact that teeth that you grow later on are not as white in comparison to *milk-teeth*, and this is why this is the generic space to build the blend on.

The fact that there are two possible theories that come into mind for this compound shows that metaphor can also be ambiguous, especially when the metaphor has been around for some time. The meaning is no longer accessible and theories begin to be formed in societies where it is still used, like for German and Spanish speaking people.

Nevertheless, whichever is the answer and real theory, blending theory can help understand the meaning. These two theories can be explained with blending theory, which signifies that metaphorically these two theories make sense and help people comprehend the use of this compound. Also, it seems as if in the Spanish speaking societies, people tend to
believe one of the two theories without as much as a thought. This is important because as Benczes wrote: “Even lexicalized compounds can be reanalyzed and, therefore, remotivated by speakers and possess some degree of compositionality and analyzability” (Benczes, 2015, p. 64). The fact that there are two theories is positive.

3.3 Milk-leg: metaphor-based modifier

Another case of metaphor based modifier is the compound milk-leg. Milk-leg is the colloquial term for a disease that historically pregnant women and mothers who had just given birth sometimes suffered from. It is now known that other people suffer from it as well. The disease consists of edema, pain and a white coloring in the leg, which is where the term milk-leg originates from. Moreover, the name in Latin phlegmasia alba dolens, means “white, painful inflammation” (Phlegmasia).

![Blend analysis of milk-leg](image)

**Figure 3.4** The blend analysis of milk-leg.

Inflammations seem to work two ways. In the one hand, if the leg is inflamed and there are clots that prevent the influx of blood, the skin becomes paler. On the other one, in Phlegmasia Cerulea Dolens, or ‘blue leg’, where ‘cerulea’ refers to the colour blue, the clots that form in the leg make it look a mix of red and purple. For the particular compound I am
analyzing in this dissertation, the generic space relies on the inflammations that draw color from the skin.

Even though the first modifying constituent is metaphorical and withdraws from the same meaning in both milk-tooth and milk-leg, the differences are impressive. In fact, while milk-tooth refers to the colour white the milk actually has, in milk-leg, the white is more metaphorical, because the colour of a leg can never be “white as milk”, it simply shows a paler kind of skin. Even though milk-leg is believed to be called like that because of its colour, there is also another possibility, and that is milk-leg is called like that because of who suffered from it on the first place: women who recently gave birth. For this, another blend is possible.

**Figure 3.5** The blend analysis of milk-leg

For this analysis, the context needs to take into account the way people in other centuries thought. Doctors in other times did not know most of the medical reasons why illnesses happened, and they might have related lactation to a leg that suddenly loses its natural colour. How changes in one part of the body affected another is in the generic space for the beliefs of that time. <lactation> is the cause in input 1 for the inflammation and pain in the leg.

**3.4 Milk-weed: Image metaphor**
Another case discussed in Benczes (2006) is image mapping metaphor, where the metaphor comes from the way a certain thing looks like. These metaphors are not based on conceptual knowledge (Lakoff and Turner, 1989). But, as described by Benczes (2006, p. 108) “Metaphorical image mappings work just the same way as conceptual metaphors: the structure of one domain is mapped onto another domain”.

The next compound I will analyze is an example of image mapping metaphor. Milk-weed is called like this, simply because the sap created by the plant looks like milk.

![Diagram of milk-weed blend analysis]

**Metonymy based compounds**

**3.5 Milk-tart: metonymy-based modifier**

*Milk-tart* (Melktart) is a dessert that comes from South Africa. Although it could be considered part of ascriptive attribution, instead of associative attribution, the tart is not completely made of milk, as milk is merely one of the ingredients. I will treat milk-tart as associative attribution. However, the fact that milk is only one of the ingredients for the tart, makes it a case of metonymy, where the part for the whole is taken into account. Metonymy “primarily has a referential function, it allows us one entity to stand for another” (Lakoff and

The milk-tart recipe is similar to the custard recipe, the only difference is that instead of more eggs, the milk-tart uses more milk, hence the name. Also, it seems this is a way in which language is being practical and economical, it would be useless to name all the ingredients that are used for the milk-tart. As Lakoff and Johnson (2003, p. 36) wrote: “Which part we pick out determines which aspect of the whole we are focusing on”. Milk is the ingredient that makes the difference between this tart and a custard one.

3.6 Milk rounds: metonymy-based profile determinant

*Milk rounds* are the routes a man would take when delivering milk in Great Britain. These routes included delivering fresh milk door to door. In this case, the first element modifier stands for what it is, milk. In this case it is the second element, or the head, that shows a metonymical stance, as it is only the word ‘rounds’ that implies the selling, delivering from house to house and the routine of doing it every single day. It is, once again, a metonymy that stands for part for the whole.

Figure 3.7 The blend analysis of milk-tart

![Diagram of blend analysis of milk-tart](image-url)
In addition to the first meaning of the compound, there is another recent use that was also born in Great Britain: when companies visit universities each year to find new candidates for jobs and also promote their companies among students. It usually happens during autumn and summer academic semesters. For this, a new graphic is needed.
To analyze the semantics of this compound, it was necessary to first analyze the blend of the original meaning with the new meaning, creating a new blend. When people talk about companies recruiting students, what is metaphorical is the blend that came from milk-rounds. Therefore, the comparison between the first blend and the new metaphor is clear. This is a new delivery system, although instead of milk, the companies offer jobs, they also deliver them from university to university and there is already a routine created towards it. As in all blends, there are things from the inputs that are not considered for the final meaning, like how milk used to be delivered in early mornings. Something interesting to keep in mind is that even though nowadays this compound is used for how jobs are offered in UK universities, this meaning is not expressed overtly, it is purely metaphorical. And in his case, the compound is not as transparent as the others analyzed in this study.

### 3.7 Other milk compounds

For lack of space in this dissertation, only some of the milk compounds have been analyzed, as the other compounds share similarities with the ones already studied. In milkman
and milkmaid, the second element is once again a metonymy for the job they perform: a milkman is a man who distributes milk, a milkmaid is a woman who used to milk dairy cows. Milk-float has the same relationship the elements in milk bottle had, it is straightforward as the float carries milk, and neither milk or float are metaphorical. In milk-fever (reduced calcium blood levels in cows), the first element is a profile determinant metaphor, “milk” is used as a metaphor for the origin of the illness, which happens at the onset of lactation. The same thing happens for milk-wort, as this is a plant that is supposed to help produce more milk in lactating mothers. Milk would be a metaphor for the process of producing milk, although some people believe this plant helps lactating cows and this could generate two types of blend, once again. Milk thistle has the same image mapping metaphor that milk-weed had, the only difference is that the milk thistle gets its name from the sap that comes from the leaves after being crushed, while in milk-weed the sap came from the stem. Milkshake is very similar to milk-tart, as milk in both compounds is used metonymically. Milkshake is never a shake of only milk, it usually has other ingredients as well, usually ice cream of different flavors. Nevertheless, the most important ingredient is the milk, just like in milk-tart.

3.8 Milk as the head of the construction

This paper focuses in the prototypical milk compounds, where milk is at the left of the construction and works as the modifier. However, to contrast and bring to a conclusion the analysis, I will analyze one of the compounds where milk works as the head of the construction.

- Buttermilk: the two elements are metaphorical.

There are various dairy drinks that are called buttermilk, I will study the traditional buttermilk, which refers to the liquid left after churning butter from cream.
In this analysis something that I have not encountered before happened, which is that both elements of the compound are metaphorical. Traditional buttermilk does not look at all like either butter or milk, but it has properties from both, like its liquid state or the color; not to forget, and this is the most important part of this blend, how buttermilk is a leftover process that once contained milk and it is a process to produce butter.

It does not matter the position of milk in the compound, whether it is a modifier or the head of the compound, it can be understood thanks to blend theory. The position also does not mean that it cannot be metaphorical or metonymical, it can be any of the two.

4. Discussion and Conclusion

The milk compounds that have been analyzed in this dissertation present associative attribution. To understand the nature of the association, blending theory has been used.

One of the things done in this dissertation was leaving terms like ‘endocentric’ and ‘exocentric’ aside. As previously discussed, compounds that have a figurative interpretation can and have been analyzed. Most of these compounds have various degrees of semantic transparency, yet none of them can be said to have a head outside of the compound or that the meaning was not primed by the two components of the structure. Like Heyvaert (2011) said about Benczes (2006) analysis: “if the analysis includes other parts of the compound (the

Figure 4. The blend analysis of buttermilk
modifier, the relation between the two constituent nouns of the compound, and the compound as a whole), they do show transparency” (p. 245).

Only one of the compounds analyzed showed something than could be close to semantic opaqueness and that would be the case of milk-rounds, when used to refer to the jobs offered by companies in universities. However, the meaning of this compound can be inferred by the context it is used in, by comparison to the original meaning of milk-rounds. This is also a special case, as what turned out to be metaphorical in this compound was the blend, which is something Benczes (2006) did not encounter in her study. Her classification included metaphor-based compounds, metonymy-based compounds and metaphor-metonymy-based compounds, and subdivisions for each of this three categories; yet, the blend as metaphorical is not included in there. Moreover, when talking about the different degrees of transparency in compounds, every compound shows a somehow different degree. It is not the same to analyze milk-tart than it is to analyze milk-leg, which shows less transparency. It is still analyzable, but the metaphorical relations require more effort to understand.

One of the most interesting things I found on this dissertation is how a compound can have two or more theories to explain their meaning, because this—and the fact that people use these compounds in day to day conversations—means that there is no point in saying a compound is semantically opaque. If there are two theories, even if they are not the original that started in the compound, it means the compound can be reanalyzed and continued to be used. This new analysis does not mean the compound gets a new meaning, on the contrary, it conserves the same one and it continues to be used in the same context as before. The complexity of each of these compounds has been analyzed and understood thanks to the metaphorical analyses carried out with blending theory.

Another question this dissertation wanted to answer was if the degrees of semantic transparency, and what is believed to be ‘exocentric’ always implies metaphor, metonymy or both, which turned out to be correct. And, once again, even though there are metaphoric and metonymic processes in the compound, this does not mean the compounds are opaque. However, this dissertation has only dealt with a small number of compounds, it can and should be further studied in other papers, because if this is way in which we can understand the semantics of compounds, Benczes’ (2006) classification used for this dissertation should be used more widely.

When we take into account psycholinguistics and how processes are processed in the mind, blend theory is the theory that can help us understand compounds better. According to Libben and Jarema (2007), even though compounds have always been a case of debate as to
how they are stored and processed, because they seem to be between words and sentences, the human mind does not seek to maximize efficiency by computing less or storing less. The mind seems to both store and compute as much as possible. If a compound word has been presented often enough so that it can be lexicalized, it is stored as a representation that can be retrieved as a whole. This, however, does not shut down the process of morphological decomposition for that word. (p. 6)

Also, if we take into consideration that the study performed by Libben et al. (2003) showed that both elements of the compounds (regardless their transparency) ultimately primed the whole meaning, then blending theory is probably very close to how human minds understand compounds: “To a very large extent, compounds result from a process of conceptual blending” (Dirven and Verspoor, 2004, p. 55). Blending theory has helped me analyze compounds in a simple, yet complex way, as it can be used for all kinds of compounds, be it transparent or figurative; understand their metaphorical processes and how the meaning is primed. This theory helps show in a better way how compounds are not simply a sum of their elements, there are different processes that work in the blend to bring the meaning out. Not only this, but there are new relations in the blend that did not exist in the separate inputs.

Furthermore, for all of the analyses of these compounds the single scope network has been used, which means that the head of the compounds is where most of the characteristics are drawn from. The modifier, however, also contributes by adding to this space, this “causes a certain amount of conceptual reorganization” (Schmid, 2011, p. 228), which helps to further understand how compounds work.

Analyzing compounds with blending theory has not been explored as much and there might be more things to discover as we continue to find out the meanings and blends of compounds that have been named ‘exocentric’.
Reference List


