Procedure for Identifying Metaphorical Scenes (PIMS): A Cognitive Linguistics Approach to Bridge Theory and Practice

Marlene Johansson Falck  
Department of Language Studies, Umeå University, Umeå, Sweden  
marlene.johansson.falck@umu.se

Lacey Okonski  
Department of Language Studies, Umeå University, Umeå, Sweden  
lacey.okonski@gmail.com

Abstract

Over the past decades, several procedures have been developed to identify metaphors at the lexical level. However, because language is complex, there may not be one superior metaphor identification procedure that applies to all data. Moreover, metaphor identification inevitably involves decisions on linguistic form that may not work equally well with all linguistic frameworks. We introduce a Procedure for Identifying Metaphorical Scenes (PIMS) reflected and evoked by linguistic expressions in discourse. The procedure is a prerequisite for the identification of metaphorical meaning that extends over phrases or longer stretches of text other than those defined as lexical units in current metaphor identification procedures and better reflects the Cognitive Linguistic (CL) view that linguistic meaning is equal to complex conceptualizations (Langacker, 2002, 2010), embodied (Gibbs, 2006b), and simulation-based (Bergen, 2012). It takes the scenes evoked by the context into account and focuses on the experiences that are coded by the linguistic constructions.

Keywords

1 Introduction

Established metaphor identification procedures such as MIP (Pragglejaz Group, 2007) and the extended version MIPVU (Steen et al., 2010) have enabled us to reliably identify metaphorically used words in discourse laying the foundation for fruitful research and increasing reliability. These procedures are theory neutral metaphor identification procedures in relationship to established metaphor theories (Gibbs, 2017: 73; Nacey, Dorst, Krennmayr, Reijnierse and Steen, 2019: 9), but involve decisions on a variety of linguistic issues that tend not to be theory neutral with regard to decisions on language (Pragglejaz Group, 2007: 23). What is an apt metaphor identification procedure thus depends on within which linguistic framework a study is done.

In this paper, we argue that current metaphor identification procedures need to be complemented by a procedure that is guided by the Cognitive Linguistic (CL) premise that linguistic meaning is grounded in embodied experience, equal to complex conceptualizations (i.e., cognitive processing), and dynamic, encyclopedic, and contextual in nature (Bergen et al., 2004; Bergen, 2012; Langacker, 1987, 2002). We therefore introduce a Procedure for the Identification of Metaphorical Scenes (henceforth PIMS) as a way to bridge the gap between theory and practice in metaphor identification.

MIP is indeed quite apt for studies within a CL framework in the sense that it involves establishing the meanings evoked by lexical units in context and how they apply to entities, relations, or attributes, “in the situation evoked by the text” (Pragglejaz Group, 2007: 4). Situations such as these may be seen as conceptualizations evoked by linguistic constructions in context and the elements involved are considered. Yet their focus on word-by-word analyses (or certain specific shorter phrases treated as lexical units) means that metaphors that extend over phrases (other than those specified in the MIP guidelines), or over longer stretches of texts, may be ignored (Boström, 2018; Marhula and Rosinski, 2019). Moreover, their guidelines for dividing words into lexical units might not always be in keeping with speakers’ conceptualizations.

This issue is highlighted by constructions that includes prepositions. In both MIP and MIPVU, constructions such as these are segmented into single-word units. However, since prepositions code relations, and “[r]elations are conceptually, dependent, i.e. one cannot conceptualize interconnections without also conceptualizing the entities that they interconnect” (Langacker, 1987: 215), prepositions can never be the sole carriers of the contextual meanings associated with them. Consider the direction of motion associated with the preposition into in sentences 1 and 2.
(1) Without them we might still be trying to figure out how to get a shuttle into space. (COCA, our emphasis)

(2) While that means there is significantly less sewage flowing into streams, the problem isn’t solved. (COCA, our emphasis)

The into relation evoked by sentence (1) involves upward, or outward, motion of a shuttle moving into space, and that evoked by sentence (2), involves downward motion of sewage flowing into streams. Still, information on the direction of into relations is not available from the dictionary meanings of into (Johansson Falck and Okonski, accepted; Webster, 2006c). It comes from our experiences of all the entities that are part of the relation and from our experiences of the types of motions involved. That is, from shuttles and space and from what motion into space must be like, from sewage and streams, and from our understanding of sewage flowing into streams. Observations such as these substantiate the CL claim that linguistic meaning is not merely lexical, but encyclopedic in nature and a matter of complex and dynamic conceptualizations (i.e., cognitive processing, Langacker, 1987; Langacker, 2002):

[L]inguistic expressions are not meaningful in and of themselves, but only through the access they afford to different stores of knowledge that allow us to make sense of them.

(Langacker, 1987: 155)

We may conclude that the contextual meaning of a preposition is never a matter of word senses alone but of meaning that is jointly construed by all the words that designate the entities (and actions) that are part of the relation. Linguistic expressions “generate meaning” (Fauconnier, 1997: 1) and are but “the tip of the iceberg of invisible meaning construction that goes on as we think and talk” (Fauconnier, 1997: 38). Still, current metaphor identification procedures do not offer a way of analyzing prepositional constructions along these lines.

It is true that MIP explicitly suggests “taking into account what comes before and after the lexical unit” (Pragglejaz Group, 2007: 3). Yet this procedure begins with analysis of predefined lexical units rather than analysis of the elements of a scene evoked by the text, and in the case of prepositions with analysis of the meanings of the prepositions alone. The same is true of MIPVU. Although our understanding of sentences such as (1) and (2) shows that new
relations are jointly construed by several words each time a preposition is used, they similarly treat the relation as a property of the preposition alone.

We suggest that starting out from the scenes evoked by linguistic constructions and considering the concepts involved better reflects the CL view that linguistic meaning equals conceptualization (i.e., cognitive processing) (Langacker, 1987, 2002) than does an approach that segments language in accordance with formal criteria. In PIMS, the scenes correspond to conceptualizations that are directly attested by the specific words and phrases that are included in the sentences under analysis, and by how the sentences are construed (Langacker, 1987). It is coherent with the CL tenet that grammar and lexicon serve an “imagic” function:

Grammar (like lexicon) embodies conventional imagery. By this I mean that it structures a scene in a particular way for purposes of linguistic expression, emphasizing certain facets of it at the expense of others, viewing it from a certain perspective, or construing it in terms of a certain metaphor. Two roughly synonymous sentences with the same content words but with different grammatical structures [---] are [---] semantically distinct by virtue of their different grammatical organization per se. (Langacker, 1987: 39)

The PIMS procedure sets out from identifying scenes evoked by clauses or sentences, or elements of the scenes evoked (i.e., the concepts evoked by the linguistic constructions that are part of clauses or sentences) and proceeds from there to decisions on potential metaphoricity. In the approach, metaphor identification involves establishing whether the identified scene or element of a scene can only be directly understood, or if they can also be understood by means of another scene or concept.

PIMS cannot be used to make claims regarding online activation of metaphors on the part of those behind the texts under analysis, but for the identification of metaphorical meanings that are “always available as an optional processing strategy” (Kemmerer, 2005) as long as the metaphorical expressions are still transparent (Müller, 2009) or have transparent elements (Gibbs et al., 1989; Hamblin and Gibbs, 1999).

PIMS can be applied alone or together with a modified version of MIP in which lexical unit decisions are based on what concepts and relations are designated by the linguistic constructions under investigation rather than on identification of word-meanings (in a one plus one fashion).
PIMS may be used as a complimentary method for tricky cases such as prepositions and multiword phrases in applications of both MIP and MIPVU but may not work quite as well with MIPVU because of their more explicit focus on comparability between distinct word senses and stricter attention to dictionary data. Consequently, although comparisons with MIPVU will be made, our primary focus is on how the approach could be used as an important complement to MIP. Using PIMS as a compliment may simplify the task for these cases where the dictionary definitions may not be helpful to the analyst. In this way, the methods may still complement each other and yield reliable results (Johansson Falck and Okonski, accepted). Next, we expand on why this approach is a necessary development to analyses within a CL framework.

2 A CL Alternative

The two dominant metaphor identification procedures MIP and MIPVU are both methods for identifying metaphorically used words in discourse (Pragglejaz Group, 2007: 1). However, as stated, their focus on “metaphorically used words” involves taking a theoretical stance that is not entirely in keeping with the CL view that words are prompts “for highly complex conceptualizations” and “points of access [---] to the totality of knowledge” (Tyler and Evans, 2007: 17) associated with them. Steen and colleagues (Steen et al., 2010: 6) suggest that MIP is based on the rationale that metaphorical meaning “arises out of a contrast between the contextual meaning of a lexical unit and its more basic meaning”. It might thus be taken to suggest that metaphorical meaning arises out of a process in which speakers contrast word meanings rather than experiences that they construe by means of language.

A slightly different view suggests that lexical metaphors are not merely lexical, but “lexico-encyclopedic conceptual [LEC] metaphors [---] that involve speakers’ experiences of the specific concepts that they refer to by the lexical items that they use” (Johansson Falck, 2018, 2022). Under this view, lexical metaphors, are not merely the results of using words in metaphorical ways, but of metaphorical understandings of the specific concepts or experiences that are construed by linguistic constructions. Sentence (3), for instance, is not merely the result of using an extended sense of the word bridge (i.e., in the extended sense of “a time, place, or means of connection or transition” (Webster, 2006a), but the result of someone thinking about behavior towards a client and what that behavior is like.
(3) If the client struggles to hold tears back, wait and try not to shed your own tears, as it may interrupt the established connection. Be acutely aware of the actions and behaviors to be mirrored. Hence, you will have connected at a level previously only imagined. Empathy is the bridge spanning the chasm that separates us from each other... (COCA, example discussed in Johansson Falck, 2018 [our emphasis])

The speaker appears to have first thought about the connection that this behavior establishes between people, and then expanded on this analogy so that it becomes more than just a connection. It is a concept that reduces a chasm between people the way real-world bridges do. That is, it is a metaphorical bridge that we understand by means of our experiences of real-world bridges that span real-world chasms.

Not all metaphorical bridge instances are this clearly influenced by speakers’ experiences of real-world bridges and the type of landscape over which they are built. Accordingly, it is sometimes argued that highly conventional uses of terms like that of bridge in (3) are no longer metaphorical. However, this objection misses the point that there must be a reason why speakers use a term like bridge in the first place and not just use some other term with a similar meaning (e.g., connect). Moreover, the objection presupposes that the term bridge can be detached from speakers’ experiences of the real-world artifact that the term also designates. This, of course, is a matter for experimental work. Still, scholars within a CL might find that analyzing lexical metaphors as the results of metaphorically used words does not do justice to the “highly complex conceptualizations” (Tyler and Evans, 2007: 17) that are evoked by linguistic constructions. Contrary to procedures that avoid making claims on the relation between language and thought, they might “take it as self-evident that meaning is a cognitive phenomenon and must eventually be analyzed as such” (Langacker, 1987: 5). They might find that linguistic meaning is hard to disembodied from the experiences that they are grounded in.

A metaphor identification procedure that starts out from analysis of the scenes evoked by texts provides an alternative to scholars who come to this conclusion. The PIMS procedure thus focuses on how meaning is construed in the texts under analysis and on identifying the types of experiences that are represented by the linguistic constructions (i.e., pairings between form and meaning (Goldberg, 1995, 2005). It is in line with the view that linguistic expressions, whether metaphorical, or non-metaphorical, are form-meaning pairings that reflect mental scenes that involve speakers’ or writers experiences of the specific concepts and relations that they represent by the linguistic expressions that they use (Langacker, 2002: 12–5), and that evoke mental
scenes for those who hear or read the expressions. Metaphors at the lexical level (i.e., those that are reflected and evoked by the linguistic constructions that speakers use) are conceptual (Johansson Falck, 2018, 2022), but less schematic than are those at the levels of primary (Grady, 1997) and complex metaphors (Lakoff and Johnson, 1980/2008).

Importantly, the approach introduced here also comes with a commitment to striving for ecological/psychological validity (Gibbs and Perlman, 2010; Trevisan and Garcia, 2019) and naturalness in linguistic description:

Linguistic phenomena are extraordinarily complex and interdependent. There are limits to the neatness and simplicity of linguistic descriptions that seek to account for these phenomena with any semblance of completeness and accuracy. Whatever our predilections, it is crucial that the conceptual and descriptive tools we fashion for analyzing language be in fact appropriate for the task. More simply put, we must strive for naturalness in linguistic theory and description.

(Langacker, 1987: 30)

Given that language use is motivated by speakers’ understandings of the concepts and relations that they do talk about, close attention to the ways in which they have been construed, brings linguistic analysis as close to the meanings and functions once intended by speakers or writers as linguistic analysis can ever get.

A procedure that takes scenes or elements of scenes into account is needed to provide the Cognitive Linguist with a tool that more closely links to the goals of analysis and that is flexible enough to treat linguistic constructions as lexical units where this is warranted by the analysis and by the specific research questions asked. In studies that focus on identifying the experiences involved, PIMS is preferable to those focusing on word meaning.

3 Empirical Grounds for a CL Alternative

The approach introduced here is compatible with a simulation view of language where the source domain of an embodied metaphor is concrete and available for potential simulation. The idea that we create mental scenes in language related activities is in line with a large body of research on simulation views of language (for reviews see Barsalou, 2008; Bergen, 2012; Gibbs, 2006a; Gibbs and Matlock, 2008). These views “reject the standard view that amodal symbols represent knowledge in semantic memory” (Barsalou, 2008: 618) and
holds that language is understood “as if we imagine ourselves engaging in actions relevant to the words spoken or read” (Colston and Gibbs, 2016: 465).

It is not possible to make claims about contexts in which simulations may occur based on linguistic analyses alone. However, in PIMS, we generally presume that linguistic constructions, whether metaphorical or non-metaphorical, have simulation potential. We could assume that “words [and other linguistic constructions] activate concepts in memory which postulate referents in discourse” (Steen et al., 2010: 12).

Under the simulation view, people make use of the same resources used in action to understand and ground the meaning of language. In particular, sentences are not understood word by word with the same lexical item being conjured in the exact same way each time. Take the scenes evoked by sentences (4) and (5) from a study by Zwaan and colleagues (Zwaan et al., 2002) and consider the eagle in each context:

(4) The ranger saw the eagle in the sky.
(5) The ranger saw the eagle in the nest.

Results suggest that participants create detailed simulations that are specific to the sentence context. When the eagle is in the nest context, the simulation includes details about the wings being tucked making it easier and faster for participants to decide that the object was in the sentence. This is also true for object orientation (Stanfield and Zwaan, 2001).

Language is not just based on mental imagery as a picture, but also as an embodied activity. In one study (Hauk et al, 2004), participants were placed in a passive reading task where participants read words such as “lick,” “pick,” or “kick” while collecting fMRI event related potential data. Passively reading the word “kick” activates the area in the premotor cortex that would be used to plan action with your foot in order to actually kick.

Embodied simulations may also underlie people’s understandings of metaphorical language (Colston and Gibbs, 2016; Gibbs and Matlock, 2008). Desai et al. (2011) have shown that participants activate the motor system of their brains when reading literal (e.g., The daughter grasped the flowers) and metaphorical action sentences (e.g., The public grasped the idea). This finding shows that the link to the sensory-motor system is retained in speakers’ understandings of metaphorical action sentences. More generally, there is ample evidence for simulation views of language, and hence for the view that language, whether literal or metaphorical, reflects conceptualizations of the meanings referred to in the language (Langacker, 1987: 5).
As stated, prepositions are sometimes assumed to designate dead metaphors, but they may also create embodied simulations. One study with German school children found a Stroop-like effect with prepositions (Ahlberg et al., 2018). The Stroop task is typically known to produce a delay in reaction time when compatible and incompatible conditions are compared. The authors conclude that experiential traces are accessed during Stroop tasks with spatial prepositions. This study found results with prepositions when shown out of context, but prepositions are extremely context sensitive.

Another study looked more closely at a preposition in context (Beitel et al., 2001). Participants’ embodied experiences with the preposition on facilitated a sorting task of on as used in various sentences. Researchers were able to create image schema profiles that could be tested with cluster and multidimensional scaling analyses. This produced three groups of conceptually similar uses of on revealing that abstract and figurative senses were grouped together across the three groups, statistically better than chance. The authors conclude that these meanings are reflective of a complex of image schemas rather than one central meaning. Furthermore, this study acknowledges the role that bodily kinesthetic and sensorimotor experiences play in literal and abstract linguistic meaning for prepositions. A CL alternative such as PIMS that starts off along the lines we suggest provides a tool to explore such complex image schemas by focusing on different kinds of scenes, for both concrete and abstract examples.

Empirical validation is needed to make any sort of online claims about simulation, but corpus linguistics and metaphor analysis can inform simulation studies by outlining hypotheses and potential stimuli. Likewise, embodied simulation research can inform perspectives on how words take on meaning in context. We explicitly acknowledge this potential and suggest that a metaphor identification procedure that focuses on the scenes evoked by the context and the experiences involved help to strengthen the relationship between linguistic analyses and the complementary cognitive work on simulation. Next, we will describe the steps of such a procedure and show how it can be used to identify metaphorical meaning evoked by different types of linguistic constructions including prepositional constructions and the lexical units that are described in the MIP guidelines.

4 The PIMS Procedure

In PIMS, the focus is on the scene being described for conceptual content. It involves determining what types of elements (i.e., concepts or experiences) or
scenes are evoked by the linguistic constructions under analysis and whether or not the elements of scenes or scenes evoked can only be directly understood or if a metaphorical understanding is possible. Table 1 is a summary of the steps of PIMS.

### Table 1: The steps of PIMS: general guidelines

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Establishing the scenes and elements to be included: Determine what type(s) of scenes will be analyzed and what concepts are (potentially) part of them.</td>
</tr>
</tbody>
</table>
| 2. | Establishing an understanding of the context:  
   a) **For analyses of texts/spoken discourse**: Read the text/listen to the spoken discourse to establish an understanding of the scene(s) to be analyzed.  
   b) **For corpus linguistic analyses** of scenes evoked by instances of a given node word, read the concordance line, or an extended context of each node word to establish an understanding of each scene(s) to be analyzed. |
| 3. | Establishing if the elements of a scene or scenes only rely on direct understanding:  
   a) **For each element of a scene (i.e., each concept evoked by a linguistic construction)**, determine if it constitutes a) an element that can be *only* be directly understood, or b) an element that can be understood by means of another (and typically more basic) type of experience.  
   b) **For each scene**, determine if it constitutes a) a scene that can be *only* be directly understood, or b) a scene that can be understood by means of another (and typically more basic) type of experience. |
| 4. | Establishing scene or element of a scene as metaphorical or non-metaphorical:  
   If a) mark the element/scene as non-metaphorical.  
   If b) mark the element/scene as metaphorical. |
| 5. | Establishing ambiguous cases:  
   If both a) and b) are possible interpretations, mark the element/scene as ambiguous. |
Step 1: Establishing the Scenes and Elements to be Included

What comprises a relevant scene or what elements of a scene are relevant depends on the aim and the research questions of the study. The first step of PIMS thus involves establishing what type of scene and what types of elements are relevant to the aim and purpose of the study at hand. Researchers who use PIMS will need to adapt it to fit within their research context and their research questions and to provide transparent descriptions of the scope of the scenes that they focus on in their analysis. For instance, in a study aimed at identifying how real-world spatial *into* relations such as those evoked by sentences (1)–(2) are used to construe linguistic meaning in metaphorical or non-metaphorical ways, a scene with a fairly narrow scope is relevant (Johansson Falck and Okonski, accepted). Works within a CL framework (Baczkowska, 2011; Lindstromberg, 2010; Tyler and Evans, 2003) typically provide illustrations of spatial scenes to describe how prepositions are used. These scenes are “abstract representation[s] of [---] recurring real-world spatio-physical configuration[s] mediated by human conceptual processing” (Tyler and Evans, 2003: 50) that consist of configurational and functional elements. The configurational elements include the located (and typically moving) trajector (henceforth TR), and a LM, which is “the element with respect to which the TR is located” (Tyler and Evans, 2007: 50). The functional element corresponds to the relationship between the TR and the LM in each spatial configuration (Herskovits, 1986/2009; Tyler and Evans, 2007) and is the element that is in focus in applications of PIMS to identifying metaphorical scenes evoked by prepositional constructions. Figure 1 is a schematic illustration of such a scene evoked by the phrase *get a shuttle into space* in sentence (1). The scene involves a real-world physical TR (the shuttle), a real-world physical LM (space) and a real-world spatial relation between these two configurational elements.

In studies aimed at answering other types of research questions, other scopes will be relevant. Some of these studies might focus on certain specific elements of scenes. This scope would be relevant in a study aimed at identifying metaphorical bridges in sentences that include the term *bridge*. Here the researcher could establish that the focus will be on bridges that are part of scenes evoked

![Diagram of a scene](image)

**Figure 1** *Get a shuttle into space* – upward motion of a TR into a LM
by linguistic constructions that include the term *bridge*. This focus would be relevant in a study of sentences similar to sentence (3), which evokes a scene that includes a bridge between two abstract concepts. For researchers who aim to identify all LEC metaphors in a given text, all elements of the scenes evoked by a text will be relevant. They could decide that each element of a scene (i.e., each concept) designated by a linguistic construction corresponds to the scope of a scene that they are interested in, and then analyze the scenes element by element (i.e., concept by concept) evoked by the text under analysis. This way of proceeding through the text would be similar to the way in which metaphorically used words are identified in applications of MIP and MIPVU (Pragglejaz Group, 2007; Steen et al., 2010), but focus on the concepts evoked as a starting point of the analysis. Identification of the elements that are part of them and what constructions they are represented by then guide how we segment the text under analysis. We will return to what scopes of scenes would be relevant in applications of PIMS to different types of lexical unit in section 5.

**Step 2: Establishing an Understanding of the Context**

The second step of PIMS involves establishing an understanding of the contexts of the scenes to be analyzed by reading the text to be analyzed (2a). Doing so is crucial in any data centered approach (cf. Pragglejaz Group, 2007; Cameron et al., 2009), but the type of work needed for doing so will vary depending on what type of study is involved. For analyses of corpus linguistic data, reading the concordance lines of each node word, or their extended contexts may be sufficient (2b), but here too source texts may be consulted where needed to establish an understanding of the contexts. Likewise, in written or transcribed data from empirical work, the surrounding context can be consulted as needed.

**Step 3: Establishing if the Scenes Rely Only on Direct Understanding**

Step three involves establishing if the elements or scenes evoked by the linguistic constructions can only be directly understood by means of the experiences evoked by them, or if they can also be understood indirectly by means of another type of experience. For instance, whether the into relations evoked by sentences (1) (Figure 1) and (2) can only be directly understood.

Consideration of the qualities of the elements involved may be useful in this process. Real-world physical relations such as those evoked by these into constructions (e.g., those involving a shuttle getting into space or sewage flowing into streams) can typically be directly understood by means of our body-world knowledge (e.g., by our experiences of real-world shuttles, space, sewage, and streams). They are grounded in body-world knowledge and involve real-world physical entities that we can perceive with our senses. By considering the qualities of the configurational elements and the scene that they are part of, we
may establish that the relations evoked by sentences (1) (Figure 1) and (2) can be directly understood by means of spatial experience and that no other experience is needed to understand this specific relation this way.

Abstract scenes, on the other hand, are typically understood by means of another type of experience. An example is the abstract bridge evoked by sentence (3) which may be understood by our experiences of a real-world bridge that spans a real-world chasm. Another example is (6), which involves an abstract TR (the economy) that plunges into an abstract LM (recession).

(6) …..two years ago, just as the economy plunged into recession.

Here the qualities of the TR and LM help establish that the relation between the configurational elements is abstract and indirectly understood by means of a spatial into relation. The relation can be visually summarized by Figure 2.

However, not all abstract concepts are indirectly understood by means of a more concrete or spatial type of experience. Abstract concepts such as joy and anger are two out of many abstract concepts that may only be directly understood. The lexical items that they are coded by (joy and anger) do not evoke more basic concepts besides the feelings that they pertain to. Similarly, some real-world physical experiences can be understood by means of other real-world concrete experiences (Johansson Falck and Okonski, accepted).

The third step in PIMS is reminiscent of that in the MIP guidelines and can be combined with this step in MIP. It too involves identifying contextual meanings by considering how a lexical unit “applies to an entity, relation, or attribute in the situation evoked by the text” ([our emphasis], Pragglejaz Group, 2007: 3) and then deciding if it has “a more basic current-contemporary meaning in other contexts than the one in the given context” (Pragglejaz Group, 2007: 3). It is also related to some applications of MIPVU (Gen Kaya, 2019; Urbonaité, Šeškauskienè and Cibulskienè, 2019) which explicitly mention paying attention to the meanings evoked by the texts under analysis. Applications of both MIP (Pragglejaz Group, 2007) and MIPVU (Marhula and Rosiński, 2019)
similarly mention metaphorical scenarios in passing. In PIMS, however, the scenes evoked and the elements that are part of them are in focus.

**Step 4: Establishing Scene or Element of a Scene as Metaphorical or Non-Metaphorical**

In the fourth step, scenes, or elements of scenes that can only be directly understood are marked as non-metaphorical, and those that can be understood by means of another and typically more basic and bodily grounded experience as metaphorical. Because the into relations evoked by sentences (1) and (2) can only be directly understood, we mark them as non-metaphorical, and because the bridge in sentence (3) and the into relation in sentence (4) can be understood by means of other types of experiences we mark them as metaphorical. The into relation evoked by sentence (7) is somewhat more difficult to analyze. It involves two real-world physical TRs (medium mangoes) that are cut into real-world physical chunks (LM). However, the TRs do not move into an endpoint inside the LM like the shuttle that gets into space (sentence (1) and Figure 1) but change their shapes as a result of an action.

(7) Add 2 medium mangoes, peeled and cut into chunks, and the seeds of 1 medium pomegranate to the yoghurt.

The scene evoked is reminiscent of the conventional metaphor change is motion (Lakoff and Johnson, 1980/2008, 1999) and might seem to suggest that the into relation is metaphorical. Still, the motion involved is not metaphorically understood, but real-world physical and grounded in bodily experience. It involves real-world physical TRs (mangoes) that literally change their shape as a result of literally cutting them into this shape. Although the mangoes do change their shape, the act of cutting them into this shape involves real-world physical motion that can be directly understood as such. For this reason, we may here establish that the into relation per se is non-metaphorical.

**Step 5: Establishing Ambiguous Cases**

In the event that both metaphorical and non-metaphorical interpretations are possible interpretations and cannot be disambiguated by context, the analyst should mark the instance as ambiguous.

5 Scopes of Scenes instead of Predefined Lexical Units

In a procedure that takes the scenes evoked by the context as a starting point of the analysis, lexical unit decisions could be consistently based on what
types of experiences are involved and on whether or not linguistic constructions designate one specific referent in the discourse. This initial step in PIMS is decisively different from those of MIP and MIPVU (Pragglejaz Group, 2007; Steen et al., 2010).

MIP (Pragglejaz Group, 2007) and MIPVU (Steen et al., 2010) were both developed to provide metaphor scholars with reliable tools for identifying metaphorically used words in spoken and written discourse. Both procedures use the lexical unit as their unit of analysis, but they do not take the elements of the scenes evoked into consideration in their lexical-unit decisions. The units are typically single-word units, but detailed instructions on how to treat multi-word units such as collocations, classical idioms, fixed collocations, and phrasal verbs and how to treat word class information are also provided in their guidelines. In MIP, decisions on what constitutes a lexical unit are based on decomposability, that is, on whether a multiword unit can be analyzed through the meanings of its parts, or if it is understood as a whole (Pragglejaz Group, 2007: 26). This would seem to be a flexible process that could take the meanings of longer constructions into account, but the latter group is restricted to individual words, proper names (e.g., Sonia Gandhi), polywords (e.g., of course and at least), and phrasal verbs (e.g., get on, and get out of) (Pragglejaz Group, 2007). Moreover, it does not consider whether the constructions designate one or several referents, actions, or relations in the discourse.

The MIPVU guidelines suggest following most of the BNC practice in lexical unit decisions. Here words with independent Part-Of-Speech (POS) tags, and words tagged as polywords in the BNC are considered separate units. In addition, some compounds, some proper names, and phrasal verbs are considered lexical units (Steen et al., 2010: 27). Decisions on what compounds and proper names constitute lexical units are based on formal criteria such as stress-patterns (this applies to both compounds and proper names), on whether or not words are spelled as one or separate words (applies to compounds), and on whether or not they appear in the dictionary (applies to proper names).

It is true that lexical unit decisions based on formal criteria are important if the goal of the study is to measure metaphor density in a reliable and transparent way (Nacey, Dorst, Krennmayr and Reijnierse, 2019). If this is the aim of the study, then MIP or MIPVU should be the preferred procedures. However, the MIP and MIPVU guidelines to segment all but a limited set of predefined expressions (e.g. phrasal verbs and polywords) is in line with the view that “the meaning of an expression generated by grammatical rules is a regular compositional function of the meanings of its parts” (Langacker, 1987). This view contrasts both with the discourse dynamics view that “metaphoricity depends on the evolving discourse context, and that we can only understand metaphor
in discourse by examining how it works in the flow of talk (or text)” (Cameron et al., 2009: 71) and with the Cognitive Linguistic view that linguistic expressions, whether non-metaphorical or metaphorical, are symbolic in nature and reflect highly complex conceptualizations (Langacker, 1987, 2002). MIPVU indeed treats phrasal verbs as lexical units based on their roles in the “referential dimension of the discourse” (Steen et al., 2010: 28) and this guideline is coherent with considering what types of experiences are involved as a first step of the analysis; phrasal verbs are considered lexical units because they designate one specific referent in the discourse (i.e., one action, process, state, or relation) (Steen et al., 2010: 28). Yet proper names such as Roy Wood and New York are treated as separate units even though they too designate one specific referent in the discourse.

In PIMS, pre-defined lexical unit decisions are replaced by analysis of a scene that is described for conceptual content. The procedure thus gives the analyst a chance to consider what types of concepts are evoked by the linguistic constructions under analysis and what kinds of relations the elements have across the scene. It allows the researcher to zoom in on smaller parts of a scene that correspond to one-word units, or to zoom out on larger parts of the text that correspond to more complex scenes. Next, we will discuss scopes of scenes that would be relevant for identifying metaphorical meaning evoked by multiword units, polywords, phrasal verbs, classical idioms, and fixed collocations, and one-word units (Pragglejaz Group, 2007: 25–7) in PIMS. Thanks to the flexibility of this approach, the concepts or scenes designated by the constructions may be kept at the heart of the analysis.

5.1 Classical Idioms and Similes

Longer phrases that include classical idioms such as be tied to someone’s apron strings, and pop the question are generally possible to analyze as single-word lexical units (Pragglejaz Group, 2007). The same is true about similes like that in sentence (8) about a woman’s eyes that opened into slits like a mole burrowing up into daylight. There may be research questions that motivate this type of segmentation. For instance, in a study of metaphorical and non-metaphorical understandings of the concept of daylight we may focus on the word daylight alone. However, as observed by Semino (2008: 16), these types of explicit manifestations of metaphoricity (i.e., statements of comparisons across different conceptual domains) will not be considered metaphorical in applications of MIP. We suggest that this is due to the focus at the level of pre-defined lexical units and word meaning. The word daylight in sentence (8) is indeed non-metaphorical since it evokes a concept that can be directly understood as daylight. However, if we zoom out from the ‘daylight’ we also notice that ‘daylight’ is part
of a bigger scene (evoked by B, sentence (8)) that involves a mole, its activity, and the point in time in which it was performed.

(8)  *Her eyes open into slits like a mole burrowing up into daylight for the first time.*

A    B

The whole scene evoked by B, and not the individual concepts that are part of this scene (e.g., that of a mole, or the act of burrowing up somewhere, or daylight etc.), is what is used to describe, or metaphorically understand, the scene evoked by A in the same sentence. Accordingly, we cannot substitute any of its elements (e.g., *daylight* with *darkness*, or *first* with *last*) without substantially changing the scene and making it a poor comparison to that evoked by A. The whole scene, and not the individual entities, actions, and relations that are part of it, are jointly used to describe the woman’s eyes that opened into slits in A. For studies aimed at establishing what experiences are used to understand which in similes (cf., Semino, 2008), we suggest treating the part of the sentence that follows the word signaling the comparison (e.g., *like, as, or as if*) as one unit that evokes one scene, and the preceding part of the sentence as another unit. Having identified these two scenes, the analyst can then proceed to decisions on whether each of the two scenes can be directly understood by means of a real-world physical scene (Table 1, 3b), and establish that each of the scenes can indeed be directly understood as such, but also that the whole simile builds on a metaphorical understanding of scene A by means of scene B. In this way, PIMS brings the analysis closer to the communicative function intended than do word-by-word analyses. By having this flexibility, it allows us to bring the analysis closer to the very point with the phrases under analysis and better understand how layers of non-metaphorical and metaphorical meanings are combined.

Similar to sentence (8), classical idioms such as *pop the question* and *be tied to someone’s apron strings* can be segmented into individual lexical units. Psycholinguistic evidence has indeed shown that people can find metaphoricity at the level of words (Gibbs, 1994). However, idioms such as these also evoke small scenes with very specific functions that are jointly construed by the words that are part of the idiom, and not by the individual words. The idiom *pop the question* is not about popping just any question, but about asking a very specific question in a very specific situation to a very specific person. It evokes a scene in which someone takes the step to propose to someone. It is true that the verb *pop* might be an important cue of the scene with possible embodied groundings. However, it is the whole scene evoked by this idiom,
and not just the act of popping that metonymically represents proposing and the associations that come with this act. Similarly, the idiom be tied to someone’s apron strings is associated with a very specific (and in this case old-fashioned) scene that metonymically represents being completely dominated by someone specific (a strict mother in a household). Here too substituting one or more of the elements evoked (e.g., tied with glued, and apron strings with tv) completely changes the scene evoked. To better reflect the fact that the individual words of an idiom jointly construe the meaning that has been used to metonymically represent (or metaphorically understand) something else, we suggest analyzing idioms such as these as whole scenes and then establish if the scene can only be directly understood or understood by another more basic type of experience (Table 1, 3b). Analyses of their contextual uses will then show whether the idioms have been used about a concept that can be directly understood as popping a question or as being tied to someone’s apron strings (i.e., in non-metaphorical ways) or about something else that cannot be directly understood as such (i.e., in metaphorical ways).

Analyzing idioms as whole scenes that are used to metonymically represent or metaphorically understand something else appears crucial if we want to explain why the meanings of idioms are not deducible from the meanings of individual words. The individual words of an idiom jointly construe a scene in a very specific context, and the whole scene that provides the meaning matters. This function, however, is somewhat clouded in analyses that focus on the level of individual words or predefined lexical units. Speakers may indeed play with idioms (and spill the tea instead of the beans) to construe related meaning, but in doing so they construe new scenes that can also be analyzed as units.

5.2 Multiword Units, Polywords, Phrasal Verbs, and Compounds
The PIMS approach similarly provides alternative ways of segmenting multiword units, polywords, phrasal verbs, and compounds. It allows researchers to identify the elements of the scene evoked (i.e., the concepts coded by linguistic constructions) and to define the units of analysis based on their roles in the scene (i.e., how the concepts have been construed) rather than on whether or not the units can be semantically decomposed. This type of segmentation is relevant where the focus is on the experiences construed by linguistic constructions and on whether or not they have been used in metaphorical ways (rather than on whether the meaning of an individual word has been metaphorically used). PIMS could be used to consistently segment proper names (e.g., Sonia Gandhi (Pragglejaz Group, 2007: 4), Roy Wood, and New York (Steen et al., 2010: 31)), compounds (e.g., pitter-patter, power plant, nuclear power, and honey hunting (Steen et al., 2010: 30–1)), and phrasal verbs (e.g., get on with, and
get out of (Pragglejaz Group, 2007: 26) that designate one referent or action in the scene evoked as one unit. This type of segmentation is consistent with the MIPVU guideline to treat phrasal verbs as lexical units based on their roles in the “referential dimension of the discourse” (Steen et al., 2010: 28), and spare the researcher from keeping track of the sometimes quite complex rules for segmenting language into lexical units based on dictionary information (cf. Pragglejaz Group, 2007: 15, 25–7; Steen et al., 2010: 27–32). Once these units have been identified, the analyst can establish if they pertain to experiences that can only be directly understood (Table 1, 3a) or experiences that can be understood by means of another type of experience. Decisions on metaphorical or non-metaphorical meanings can then be made following step 4 in PIMS. However, here too decision on the scope of scenes evoked will be based on the aim of the study and the research questions asked.

5.3 Individual Words

An approach that focuses on the scenes evoked by the context and the elements involved may also be used as a first step in analyses of individual words. This would be relevant in studies that focus on elements coded by individual words. Here the focus would be on establishing whether the elements that are part of the scenes evoked (i.e., the concepts evoked by individual words) can only be directly understood, or if they can be understood by means of another type of experience (Table 1, step 3a).

PIMS can also be combined with MIP once it has been established that dictionary entries correspond to the linguistic constructions that are relevant to the study at hand. The focus in MIP on the meanings evoked by lexical units, the fact that they take lexical units before and after each unit into account, and the fact that they consult dictionaries merely as frames of reference when needed to check analysts’ intuitions (Pragglejaz Group, 2007) work well with this approach. It may involve analyzing shuttle, get, and space in sentence 1 as linguistic units because they all designate one concept in the scene evoked by the context. In PIMS, however, the scenes evoked by the discourse and identification of the elements involved are the starting points of the analysis. Once they have been identified the researcher can identify metaphorical meaning element by element by following the steps of the procedure.

Moreover, combining PIMS with MIP comes with the cautionary note to avoid giving dictionary entries an unwarranted degree of attention as it may lead to conflicting results such as having a metaphorical instance of talk but failing to confirm a metaphorical instance of speak when describing a student’s writing. MacArthur’s (2015) study of the speaking verbs say, contradict, tell, talk, argue, and speak in a college essay about writing, shows that identification of
metaphorical meanings by comparing contextual meanings to basic meanings may lead the researcher astray from what is going on in the discourse. On the one hand, it was clear from the extract that the lecturer used all the speaking verbs to metaphorically frame the topic of successful communication in the student’s essay by inviting the student to see the writing process as one in which she guides the reader through the text. On the other hand, comparison between the contextual meanings and the basic dictionary meanings of the speaking verbs suggested that only two of the verbs (talk and speak) were metaphorical on grounds related to this way of framing the topic. Based on the application of the MIP procedure, the other ones were either rejected as metaphorically used or potentially metaphorical on grounds suggesting that they go back to meanings that involve physical transfer. MacArthur concludes that what we have here is not a metaphor shifting from literal to metaphorical, or metaphorical to literal uses of the same words, but “a scenario in which the act of writing is being consistently seen as an act of speaking, and the verbs flesh out his invitation to imagine that this is what the successful writer does” (MacArthur, 2015: 134).

In a procedure that focuses on the scenes evoked by the context and on whether or not the experiences evoked have been metaphorically used, contextual information should be allowed to override dictionary data. Dictionaries are indeed helpful resources in such analyses, but whenever there is a clash between the meanings evoked by the linguistic constructions in discourse and the ways in which they make sense when taken together (cf. MacArthur, 2015), and the dictionary meanings of individual words and phrases, the meanings evoked by the discourse should be paid more attention than those available from dictionary information. The PIMS approach allows identification of all metaphors that have the potential of being activated and not just those that would seem so based on dictionary information.

6 Pros and Cons of PIMS

Because the scenes that are evoked by linguistic constructions in discourse correspond to conceptualizations, their scopes cannot be defined in advance. The flexibility with which scenes can be defined is both a limitation and a strength of PIMS. The number of scenes that may be evoked by linguistic constructions in discourse is inconceivably large and what is a relevant scope of a scene varies with the purpose of each study. For this reason, it might initially seem less straightforward to approach the data this way. At the same time, PIMS offers a consistent way of analyzing phrases that is licensed by
what types of experiences are involved and it is malleable enough to reflect the complex ways in which meaning is construed. By having this focus it may in fact be easier to apply than are those aspects of MIP and MIPVU that are related to semantic analyses of contextual meanings and establishing which, if any, dictionary meanings they match. No matter if there is variation between speakers, a mental scene that involves a shuttle getting into space, will be a scene of a shuttle getting into space to everyone who is familiar with shuttles and space, what getting into space can be like, and with the linguistic labels that speakers use to code these types of experiences. In fact, our application of PIMS to the analysis of prepositional constructions (Johansson Falck and Okonski, accepted) shows that applications of PIMS yield reliability levels that are comparable to applications of MIPVU. Results suggest that the approach can be reliably implemented even though it is not based on predefined definitions of lexical units and strict adherence to dictionary information.

By focusing on the scenes that are evoked by linguistic constructions, PIMS brings metaphor identification closer to the context, closer to the kinds of experiences that are construed by the linguistic constructions, and closer to the question of whether or not the experiences can be directly understood. This could also be a helpful strategy when the qualities of the concepts involved are at odds with dictionary information. Consider the concepts evoked by the nouns compliance and submission in (9) and (10):

(9) No longer do 40-plus women need to abdicate to middle-aged hair do’s (curled and short, sprayed into compliance) or sensible rather than attractive clothes. # Bottom line: people don’t have expiration dates. (COCA, our emphasis)

(10) But she had her mother’s untameable hair, which Jessica wrangled into submission with a flat iron three times a week. (COCA, our emphasis)

Dictionary entries of these two nouns suggest that they denote purely abstracts concepts (Webster, 2006b, 2006d). However, both (8) and (9) evoke scenes in which someone’s hair has been forced into place. Here the physical results of this act are understood as compliance and submission. Although the LMs would seem abstract given their dictionary meanings, the contextual qualities of the LMs evoked are still concrete. In a CL approach where the scenes evoked are considered, we might thus establish that (9) and (10) evoke real-world physical TRs (middle-aged hair dos and someone’s mother’s untameable hair) that are sprayed or wrangled into real-world physical states of compliance or submission. They involve the real-world physical action of literally
putting real-world entities into place and hence a spatial relation that can be directly understood as such. In this way, PIMS can be used to establish that the relation per se (i.e., the motion into the physical state) is non-metaphorical.

Steen and colleagues (Steen et al., 2010: 99–100) discuss similar difficulties in their analysis of the preposition *in* in the following example:

(11) [...] and his grey eyes, which at times seemed colourless, had *in* [...] their depths a touch of melancholy that had deepened with the years. (Steen et al., 2010: 99)

Their analysis revealed difficulties deciding whether *in* had been metaphorically used. The difficulties were related to difficulties establishing the quality of the notion of *depth*. Two of the analysts concluded that *depth* denotes an abstract noun, but the other two that it metonymically represents a physical state. They suggest that the difficulty was caused by the presence of the concrete concept of eyes, which makes it hard to decide which of the two interpretations should be given. If the notion of depth metonymically applies to eyes, it is related to a physical location rather than an abstract state. They conclude that the issue is resolved by following the guidelines stating that first the entire text or discourse should be read to establish a general understanding of the text:

This analysis shows that we cannot resolve this issue by solely consulting the sense descriptions in the dictionary; an analysis of the relationship between words, concepts, and referents in the text world is also required. (Steen et al., 2010: 100)

We suggest that consistently focusing on the scenes evoked might be helpful in dealing with the many difficulties attested by the many studies aimed at identifying metaphorical uses of prepositions (Krennmayr, 2011; Marhula and Rosiński, 2019; Nacey, Greve, et al., 2019; Reijnierse, 2019). With PIMS, the analyst is not side-tracked by strict attention to dictionary meanings and how they relate to contextual meanings but can instead focus on the qualities of the entities evoked by the prepositional constructions and what they tell us about the relations between them. In such an approach, *depths* would be considered to designate an interior part of someone’s eye and the quality observed there to be literally seen in that person’s eye. Although the concept of melancholy might seem abstract, it is a quality that is observed inside a specific real-world physical entity and the entity has boundaries. We would be able to conclude that it is a spatial relation that can be directly understood as such. It is a non-metaphorical relation.
Dictionaries may indeed be helpful resources and using them as suggested by the MIP and MIPVU guidelines a good practice even in applications of PIMS. Still, issues such as those related to the analysis of compliance, submission, and depths, show that the scenes evoked by the context provide important information that may be more relevant to the analysis than strict attention to dictionary data. Moreover, word entries tend to vary between dictionaries and over time. In an approach that starts out from the scenes evoked by the texts under analysis and from the relation between the elements involved, the analyst treats tricky cases such as prepositional constructions in a consistent way irrespective of how their meanings are structured by different dictionaries. It highlights the experiences described by the speakers or writers, rather than relations between word senses that they may or may not be familiar with.

The focus on the scene evoked also means that PIMS is flexible enough to account for metaphorical meanings associated with any unit of analysis. As long as the researcher describes what types of scenes, or elements of scenes, are in focus and how they were defined, different applications of this approach should still be possible to compare. Accordingly, our applications of PIMS to the analyses of prepositional constructions show that PIMS is a reliable method for identifying metaphorical meaning (Johansson Falck and Okonski, accepted).

We encourage researchers to adapt PIMS to fit within their research context and to best address their research questions. The procedure seems particularly useful in studies that focus on how contextual meanings are construed or on how concepts attested by linguistic constructions are used to understand other kinds of concepts in metaphorical ways. For example, the move away from the dictionary and towards conceptual content may be appealing to those in the field of Cognitive Poetics:

Traditional grammar distinguishes between a word’s denotative—its ‘literal’ or dictionary meaning—and the connotative—the associations and implications a word carries with it. For cognitive scholars, this distinction no longer holds. Meaning is encyclopedic: that is, any language utterance is meaningful only in the context of its situation, culture, and intentions of both speakers and hearers...

(Freeman, 2020: 26).

7 Other Perspectives on Emergent Meaning

The focus on the scene evoked by linguistic constructions in discourse and the types of experiences that are involved is reminiscent of the Discourse...
Dynamics Approach to Metaphor and Metaphor-Led Discourse Analysis (MLDA) to metaphor identification (Cameron et al., 2009) and Boström’s (2018) modified version of MLDA in basing decisions on the discourse. Their procedures are situated within a complexity theory and a dynamic systems perspective, which highlights change in the systems and “an understanding of linguistic and cognitive phenomena as flows, or movement, rather than as objects” (Cameron, 2003; Cameron and Deignan, 2006; Gibbs and Cameron, 2008). They are both based on the view that contextual meanings are emergent phenomena that result from dynamic interactions between complex interacting systems (e.g. language, cognitive, physical, environmental, and social ones (Cameron et al., 2009: 66). PIMS works well with this perspective and may also be combined with the careful ways in which an understanding of the discourse is established according to the MLDA guidelines where this is motivated by the aim of the study. However, their suggestion that linguistic metaphors are “metaphors in language use [that] contrasts to metaphors in thought” (Cameron et al., 2009: 71) stand in sharp contrast to the view adopted here. Moreover, their focus on identifying incongruent and anomalous vehicle terms differs from the focus on identifying what types of concepts of experiences are involved. Their approach suggests that metaphorical expressions are somehow deviant from normal, non-metaphorical language while the approach we suggest is inspired by the idea that metaphors are a fundamental part of the cognitive system.

Boström’s procedure (2018: 87) does not involve identifying incongruent and anomalous vehicle terms, but rather contextual meanings that differ from more physical/concrete meanings of linguistic expressions. It is closer to the suggested approach in this respect but does not involve analyzing the scenes evoked by linguistic expressions in discourse as a starting point of the metaphor identification procedure. An approach that is based on the Cognitive Linguistic premise that linguistic meaning is symbolic in nature (Langacker, 1987: 11) and equated with conceptualization (i.e., cognitive processing) (Langacker, 1987: 5) is thus needed.

8 Conclusion

In this paper, we introduced a metaphor identification procedure that focuses on the scenes evoked by linguistic constructions and the elements involved. The approach is a necessary complement to MIP for the identification of metaphorical meaning that extends over phrases or longer stretches of text other than those defined as lexical units in current metaphor identification
procedures, but also a more viable first step for studies within a CL framework more generally.

The focus on scenes evoked by linguistic constructions in discourse is decisively different from the first steps of MIP and MIPVU. It means that segmentation of lexical units prior to metaphor identification is replaced by decisions on what types of scenes or what elements of scenes are relevant to the aim of the study and the research questions asked. The scenes correspond to conceptualizations that are directly attested by the specific words and phrases that are included in the sentences under analysis, and by how the sentences are construed. Considering them is a useful first step in any metaphor identification procedure.

Beyond the identification of metaphorical or non-metaphorical meaning, this kind of approach also focuses on conceptual elements that bring the process of metaphor identification and metaphor analysis much closer in practice for the Cognitive Linguist. It provides a CL alternative to other metaphor identification procedures, which could be used for studies that focus on how contextual meanings are construed or on how concepts attested by linguistic constructions are used to understand other kinds of concepts in metaphorical ways.

Future applications of the approach may necessitate making new decisions on what constitutes a scene, or the scope of a scene, and further tests of the reliability of applications of PIMS. However, the procedure introduced here, is a first step towards teasing apart the complex ways in which linguistic constructions are used to create metaphorical and non-metaphorical meanings and analyses of how these meanings are combined. In PIMS, one and the same linguistic construction can be analyzed as part of a smaller non-metaphorical scene that in turn has been used to describe something else in metaphorical ways. The procedure thus makes it possible to identify how smaller linguistic constructions have been used to construe larger linguistic constructions and how non-metaphorical and metaphorical meanings are combined. Analyses of such layers of non-metaphorical and metaphorical meaning is an interesting prospect for further research as is further testing of the reliability levels of the procedure. Another prospect for further research involves developing ratings that can account for a more dynamic scale of metaphoricity.

References

Ahlberg, Daniela Katharina, Heike Bischoff, Jessica Vanessa Strozyk, Doreen Bryant, Barbara Kaup and Manuela Schoenenberger. 2018. How do German bilingual


