

LOVE and ANGER. The grammatical structure of conceptual metaphors

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0. Introduction

This article integrates grammatical analysis into the study of conceptual metaphors. Although the study accepts the work of Lakoff (1987), Johnson (1987), and Kövecses (1986), it argues that these lexical approaches are insufficient to offer rigorous and complete analysis of cross-reference mapping. It takes the hypothesis that lexis and morpho-syntax are interdependent, presented by Langacker (1990, 1999) and Talmy (1988, 2000), and examines the grammatical structure of conceptual metaphors.

The analysis focuses on two emotion concepts, ROMANTIC LOVE and ANGER. Firstly, the discussion demonstrates weaknesses in a lexically based analysis of conceptual metaphors by examining ANGER. It argues that current approaches to the study of metaphors lack both sufficient means for the verification of results and sufficient tools for revealing the structure of those results. The discussion moves to resolve these issues by examining the emotion concept LOVE. Instead of focusing purely on the lexical structure of the conceptual metaphor, it combines this with a study of grammatical structure. In doing so, it demonstrates how this grammatical evidence may help resolve problems faced by lexical analyses. Moreover, by drawing on the invariance hypothesis proposed by Lakoff (1993) and Turner (1993), it reveals details of conceptual structure that are not visible in lexical analysis, further supporting the need to systematically integrate grammatical evidence into the study of cognitive semantics. Thus, by combining the invariance hypothesis and grammatical analysis, the study demonstrates that the internal structure of conceptual metaphors is more complex than is evident from lexical approaches typically taken in the study of these metaphors.

1. [?]ANGER is GIVING BIRTH: Verifying Co-occurrence.

Purely lexical analyses of cross-reference mapping do not offer enough scope for the verification of the results they produce. A lexically based study of conceptual metaphors is based on an assumption. This assumption is that if there are a reasonable number of similar semantic extensions (where both the source and target domains of the extensions are similar), then these extensions indicate the existence of a conceptual metaphor. All that is necessary to identify these domains, and or schema (cf. Clausner & Croft 1999), is the identification of lexical co-occurrence. Cognitive semantics argues that such co-occurrence in 'everyday metaphors' is neither a coincidence nor a superficial lexical phenomenon, but

the surface result of conceptual structuring of the semantic system. As will be demonstrated below, this is not always the case, but that co-occurrence may at times be merely 'co-incident'. If lexical co-occurrence does not *necessarily* represent cross-reference mapping, how can we then determine which instances of co-occurring expressions represent metaphoric correspondences and which are 'coincident' in their similarity?

The following section attempts to answer this question. However, before one broaches the question of 'lexical co-incidence', one must also confront the closely related theoretical problem of set membership.

1.1 *Set Membership of Conceptual Domains*

One of the fundamental questions that face cognitive semantics is the application of prototype set theory to its processes of analysis. The work of Geeraerts (1997), Grondelaers et al. (1994), and Kleiber (1990) has demonstrated the success of this application at a lexical level. This, however, remains to be successfully achieved in the study of metaphors. The current study does not broach this issue directly, but outlines its importance and offers tools of analysis that are needed to properly investigate prototype structures in cross-reference mapping.

Conceptual metaphors do not represent blocks of meaning that we transport from one domain to another. They result from complex 'webs' of associated meaning that is mapped onto other 'webs' to highlight features of that second 'web', the target domain. The problem is how to understand the lexical organisation of conceptual correspondences and identify differentiation between and within these domains.

To understand this, let us briefly examine a familiar metaphor. Take for instance the following examples (1) - (6).¹

- (1) They were having a heated argument.
- (2) Those are inflammatory remarks.
- (3) Sparks flew when Saïd entered the room.
- (4) You make my blood boil.
- (5) Billy's just letting off steam.
- (6) When I told him he just exploded.

These examples indicate the lack of means for delineation in the source domains. Are these expressions part of one general metaphor ANGER is HEAT, or rather, do they belong to two independent metaphors such as ANGER is CONTAINED PRESSURE and ANGER is FIRE? Sentences [1] - [3] take the concept 'fire' as a source domain where [4] - [6] take the conceptualisation of 'contained heated fluid creates pressure' as a source domain. By what reasoning do the studies of Lakoff and Kövecses distinguish these concepts as separate domains? Surely, the principle of generalisation would lead us to describe the source concept here as simply HEAT? The answer to this question is that an analysis of the cross-reference mapping is more productive if we separate the source domains into their respective sub-groups. By doing this, not only do we begin organising our data in such a way that prototype set theory may be properly applied, but we explain the highlighting of the target domain in more detail. However, the question reveals an important weakness in the identification of source domains.

Why is *losing one's senses* related to madness? Similarly, why do *blind with rage* or *with love* and *go mad with anger* or *insanely jealous* represent something similar? That is: how do we judge the boundaries, and thus the members, of the prototype sets that we identify as source domains? Is *blind love* or *rage* necessarily related to *insane jealousy* or *mad anger*? It is because we equate insanity with the loss of sensible behaviour that we judge them similar. This is less obvious than it may seem because such a judgement of similarity is dependent on cultural mediation. It is likely that unless a metaphor is based on some primary concept, or embodied experience as the work of Lakoff & Johnson (1999) supports in certain circumstances, that the source domain is equally a product of some culturally dependent conceptualisation. Such metaphors are called compound metaphors as opposed to primary metaphors by Grady (1997). Despite their obvious importance due to their universality, it is the culturally dependent 'compound metaphors' that clearly make up the greater percentage of our metaphoric conceptualisation. Thus, in a culture with a tradition of Shamanism, for example, it is far from obvious that 'lack of sensible behaviour' would be automatically associated with 'anger' or 'madness'. In such a culture, it is imaginable that compound metaphors, or purely culturally determined metaphors, lead to a different conceptualisation of 'sensible behaviour'.

Nevertheless, the work of Kövecses and Lakoff demonstrates that through extensive analysis of the figurative lexicon it is possible to deduce reasonably clear patterns of delineation between source domains. Obviously good judgement in research is largely the basis for the success of such analyses. There is, however, clearly room for improvement in the description and identification of lexical and conceptual similarity. The current study argues that one possibility in achieving this is by extending the study of conceptual

metaphors into the grammar of the metaphorical lexicon. Such an analysis results in increasing the amount of information available on the structure of the conceptual domain. This helps us elucidate cross-reference mapping by clarifying how the various elements of a source domain relate to each other. Moreover, the grammatical study of cross-reference mapping may also form a base for the rigorous application of prototype set theory to cognitive semantics.

1.2 *Lexical Co-incidence*

Previous studies identify conceptual metaphors by searching the lexicon for sets of similar metaphoric expressions. This poses another problem inseparable from the one discussed above. Just as it is difficult to judge the boundaries of conceptual similarity, it is difficult to judge similarity at a lexical level. For example, it is hypothetically reasonable that a given set of figurative expressions possessing source domains that appear similar may, in fact, not represent a conceptual metaphor. A given set of lexical items may share something in common conceptually, but in fact, this conceptual unity is not employed by the semantic system of the language to 'highlight' another domain metaphorically. In such a situation, the expressions share similar non-figurative senses, but the metaphoric information that is being 'activated' does not belong to the source information that is shared between the expressions. If this were the case, then the expressions belong to different correspondences, their source domains being only co-incidentally similar.

Let us consider a small set of examples from French. These expressions below are all used to represent ANGER. Immediately, based on their lexical makeup one would imagine that ANGER is a COLOUR in French.

- (7) Il est vert de colère. (GREEN)
He is green from anger.
- (8) Elle est dans une colère noire. (BLACK)
She is in a black anger
- (9) Il pâlit de colère rentrée. (WHITE)
He whitened/ paled from deep anger.
- (10) Elle est rouge de colère. (RED)
She is red with rage.
- (11) Il est livide. (BLUE)
He is livid.

The last example (11) is only diachronically a colour term, its original signification being opaque to most speakers in French as it is in English. The item comes from Latin *lividus*, from *livere*, to mean 'bluish' and thus the item was at some stage, not too long ago, used metaphorically. It is clear from the glosses that it might equally be possible to posit a conceptual metaphor ANGER IS A COLOUR for English. However, *green* is unacceptable in English where it is quite common in French. Similarly, English probably took *livid* from French in its metaphorical usage; the source domain was probably not transparent or retrievable. Nevertheless, it seems intuitively unreasonable to posit such a metaphor for either language. Indeed it seems this is perfect example of what was called above, lexical co-incidence.

In order to further understand the problem, let us consider a set of examples that highlight both the problems of set membership and lexical co-incidence. In Australian vernacular, for instance, there exists the following set of expressions for describing the state of ANGER:

- (12) He *had a baby* when he heard what happened.
- (13) She'll *have kittens* if she finds out!
- (14) Don't *have a cow!* It's no big deal.

These expressions all depict an *attack of anger*. They highlight, imaginably, the similarity of the behaviour during labour, even giving birth to a large animal such as a cow, to the behaviour expressed during an attack of anger. Do these examples represent a single conceptual metaphor or do they draw on several metaphoric structures? If they represent a single metaphor, it would be reasonable to deduce that this metaphor would be ANGER IS GIVING BIRTH. Intuitively, this seems reasonable unlike the above French example. The aim of this study is a methodical introduction of grammatical studies into conceptual metaphor analysis. These expressions for ANGER offer us an opportunity to apply this principal. Consider two expressions to describe ANGER that do not share lexical similarity yet do share syntactic similarity:

- (15) Mick's *having a spack attack* over his broken bat.
- (16) Najet is *having a fit* because of the proposed staff cuts.

Although the syntactic form here, *to have* + direct object, is common, it is rarely found in expressions describing states of emotion. Thus, the syntactic co-occurrence may suggest that the origin of the expression *have a baby*, in the non-figurative sense, is related in some way to *having a fit* or *having an attack*. Unfortunately, since these examples are not figurative they do not suggest an alternative source domain for examples (12) - (14). There exist, however, other metaphoric expressions with a similar syntactic form. Consider example (17) in light of the ontological correspondence: 'pressure in a container is internal pressure in the body'.

(17) Kylie is sure to *have a hernia* when she sees this mess.

Examples such as this draw our attention to the metaphor ANGER is the HEAT of a FLUID in a CONTAINER, identified previously by Lakoff (1987:386-8) and Kövecses (1990:53-5). Part of this metaphor is the conceptualisation of the 'release of pressure' that seems intuitively more acceptable than a metaphor such as ANGER is GIVING BIRTH. Thus, by considering the co-occurrence in the syntax of these examples with examples (12) to (14), one can see that the lexical identification of a source domain such as CHILDBIRTH is inaccurate.

The consideration of syntax here shows how the study of the construction is important for determining lexical relationships across source domains. When grammatical forms of examples, such as (12), (15), and (16), are identical, it may suggest conceptual similarity, just as lexical co-occurrence often represents conceptual similarity. In the search for a rigorous means of establishing and verifying source domain membership, an examination of grammatical co-occurrence can prevent us 'jumping to conclusions' such as would have been the case for ANGER is GIVING BIRTH based solely on examples (12) - (14). Here, without referring to other non-figurative expressions that shared only syntactic similarity, it would have been reasonable to propose a metaphor, which seems, after this syntactic comparison, to be erroneous. The syntactic comparison led the analysis to consider expressions that are based on the conceptualisation of the 'release of pressure' rather than a source domain of 'childbirth'. This is an example of the importance of syntactic information in metaphor study that also demonstrates the method by which it may be incorporated.

From this discussion, we can see that two procedures are necessary to identify a conceptual metaphor. One must firstly identify a set of metaphoric expressions as similar in their source domain. Then secondly, once one identifies a set of similar expressions, one must demonstrate that they represent a conceptual metaphor, rather than a coincidence in

the lexicon. The weaknesses in the current methods of conceptual metaphor analysis exist because there is only one means for revealing the correspondences. The process typically employed relies on the evidence derived from co-occurrence of similar figurative expressions. The sub-title of Kövecses (1986) summarises this position. In his words, this is the 'lexical approach to the structure of concepts'. Such an approach has faced some criticism, especially in the work of Ortony (1988) and Goddard (1988). They argue that even the wide co-occurrence that is the evidence for conceptual metaphors is simply a lexical phenomenon, based perhaps on analogy, but representing nothing profound in the conceptual structures of cognition.

One does not need to agree with their criticism to learn from their argument. If, as has been repeatedly stressed in cognitive linguistics, the different levels of language are only arbitrarily separable, then a phenomenon as profound and pervasive as cross-reference mapping should also be visible in other levels of language structure such as syntax and morphology. By revealing grammatical evidence for conceptual metaphors, and therefore the extent of their role in linguistic organisation, one presents further evidence that these structures are indeed rooted in a conceptual level of cognition.

As was shown with examples (12) - (14), by looking at a combination of lexical and syntactic co-occurrence the source domain of the metaphors was revealed. Such syntactic co-occurrence can often offer the evidence necessary to understand the metaphoric mapping in an expression. This addition of grammatical analysis to lexical study does not, on its own, solve the problems of demarcation or verification of source domains, nor completely answer the arguments of Ortony and Goddard. However, in combination with lexical studies, syntactic investigation is an invaluable tool for the description of conceptual metaphors. Likewise, by demonstrating their influence on syntax, lexico-semantic analyses throw weight behind the argument that conceptual metaphors represent 'profound' semantic structures.

Grammatical analysis has another role to play, not as a secondary system of verification, but as a device for revealing correspondences and features of those correspondences inaccessible through lexical analysis. It does this by differentiating between the domains themselves in a more accurate manner and by revealing characteristics of those domains that are not evident in their lexicon. The following section of this article investigates the role of grammar in our understanding of cross-reference mapping and description of conceptual domains.

2. ?*She will have a crush on him: Identification of Target Domains.*

The previous section outlined problems in identifying the delineation across source domains; yet, in a similar vein, the internal structure of the 'target' domain poses problems. When one posits a metaphor such as LOVE is a JOURNEY, first described by Lakoff & Johnson 1980, one bases this on the wide array of expressions meaning 'something like travelling' to describe LOVE. However, assuming the identification of the source domain is accurate, onto what exactly is this domain being mapped. It is equally possible to describe the relationship one has with a long-term employer in terms of JOURNEY, as it is to describe LOVE. Assumedly, in this instance one would not want to posit that this is a relationship of LOVE. On the other hand, it is difficult or near impossible to describe a 'fling', 'teenage crush', or 'one night stand' in terms of JOURNEY, even if this second option might be imaginably closer to LOVE than a typical employer-employee relationship. Let us take some examples from the lexicon of LOVE to understand this issue.

- (18) a. He was knocked out when she walked into the room.
b. She was bowled over by his beauty.
- (19) a. She is mad with love for her.
b. She lost all her senses with this infatuation.
- (20) a. Peter and Michael were made for each other.
b. James is certainly a part of his heart.

Do these expressions all represent variations of the same ROMANTIC LOVE? That is, do all these examples share the same target domain? Certainly, they are 'highlighting' different aspects of LOVE. However, it may be a more accurate description of these expressions to argue that they represent two independent concepts: SUBSTANTIAL LOVE and INSUBSTANTIAL LOVE. This may simply be because the metaphors employed in these examples highlight the variations of substantial and insubstantial love as part of the single 'idealised' cognitive domain of LOVE. It is also possible, however, that the differences between these 'highlighted' variants of the prototype are so great that they accept a wholly different set of correspondences and thus are conceptualised with a different metaphor structure. Whether different domains or simply sub-structures, we need to account for and describe this phenomenon.

The following discussion presents some examples describing this problem of target domain integrity. It then offers a solution to the problem applying collocation analysis and the 'invariance hypothesis' developed by Lakoff (1989, 1990, 1993) and Turner (1988, 1990, 1993).

Consider the expressions below. Why do examples (21b) and (21c) have awkward readings?

- (21) a. She's got/has a crush on him.
b. ?She'll get/have a crush on him.
c. ?He's going to get/have a crush on her.

It is because this sense of *crush* will not produce well-formed phrases in the future tense. Is this a lexical feature, or rather, the effect of the conceptual domain to which *crush* belongs? Consider the following similar expressions using *will* as a future auxiliary:

- (22) a. He has got the hots for him.
b. ?He will get the hots for him.
- (23) a. She has it hot for her.
b. ?She will have it hot for her.
- (24) a. He has a thing for her.
b. ?He will have a thing for her.
- (25) a. She has only eyes for him.
b. ?She will only have eyes for him.
- (26) a. She has her eye on him.
b. ?She will have her eye on him.
- (27) a. He has tabs on her.
b. ?He will have tabs on her.

These examples employ different lexemes, but encounter the same problem in the future tense. This suggests that the semantic awkwardness is not a feature of *crush* but a feature of the set expressions to which *crush* belongs. Moreover, this set of expressions shares both a strong degree of syntactic co-occurrence and semantic similarity. Could the similarity in

form across these expressions be linked to the similarity in sense? Could the constraints on future tense forms in these expressions be a result of the conceptual domain to which they belong? To answer these questions let us consider these expressions in light of some well-known metaphors for LOVE.

One similarity in sense across these expressions might be described as aspectual. All of these expressions refer to a non-durative state. The metaphor of LOVE as a JOURNEY is obviously a durative conceptualisation. Accordingly, it should not be possible for this metaphor to map productively onto such expressions. In examples (28a) and (29a), one can produce the metaphor LOVE is a JOURNEY. This metaphor is not possible in the examples (28b) - (28c) and (29b) - (29c), nor is it possible for the examples above (22b) - (27b).

- (28) a. He's at a turning point in his love for her.
b. ^{??}He's at a turning point in the crush he has for her.
c. [?]He has a crush on her but is at a turning point.
- (29) a. Her love for him has come to an end.
b. ^{??}Her crush on him has come to an end.
c. [?]She had a crush on him but it has ended.²

The aktionsart, or lexical aspect, of *have a crush* and its comparable constructions is non-durative. As can be seen in example (28), the construction does not allow *turning points* to take place during the period of time that a *crush* prototypically covers. In aspectual terms, these constructions restrict the focus to internal temporality. Example (29) demonstrates a similar phenomenon: for something to 'come to an end', it must have internal temporality. This explains the ungrammaticality of (29b) - (29c). One can override the prototypicality of the lexical aspect with periphrastic aspectual information. Thus, examples (30a) and (30b) are perfectly well formed.

- (30) a. He's had this crush for years, but he's at a turning point now.
b. She's had the hots for him for years, but she's at a turning point now.

In these examples, a periphrastic marker makes us look at the possibility of more temporal duration in the expression. However, even with periphrastic information, there are still constraints on the morphological aspect. It follows that one cannot form expressions using durative morphological aspect such as the past progressive:

- (31) a. ??She was having a crush on her for years.
b. ??She was having the hots for her for years.

If one maintains the tense but changes the morphological aspect one may produce a well-formed expression:

- (32) It was a crush he had on her, but then he reached a turning point.

However, in this instance the *turning point* does not refer to temporality of *crush* but outside the clause to the temporality of the subject's life as a whole.

We can conclude from the above examples that it is not possible to use the metaphor LOVE is a JOURNEY with the typical usage of the set of expressions (21)-(28). Importantly, this incompatibility is the result of a grammatical feature of these expressions. There are two explanations, not mutually exclusive, that can account for this incompatibility of the grammar and the metaphor. Firstly, the grammar of the metaphoric information in the source domains of these examples 'clashes' with that of the LOVE is a JOURNEY metaphor. Secondly, these expressions are describing a different target domain that cannot be conceptualised with the JOURNEY metaphor. Both of these explanations are interesting structural phenomena of cross-reference mapping. The remaining discussion develops the latter of these possibilities.

The key to understanding these phenomena is grammatical investigation. Indeed, it seems that the strong grammatical similarity that co-occurs across this set of lexemes is related to the general 'sense' that these expressions share. It is the non-durative aspect of the constructions that prevents them from accepting the JOURNEY metaphor, and it is precisely that idea of 'non-durateness' that characterises the meaning of these expressions.

If the phenomenon described above is common, it is likely that conceptual domains not only possess semantic features but equally some degree of grammatical character. If it is true that grammatical features co-occur in the same regular fashion that figurativity does in the lexicon, then these features are an important part of the characteristics, or topology, of conceptual domains. Thus, in such instances, grammatical analysis of cross-reference mapping not only supports the finding of the lexical analysis but also complements it by adding more information to its description.

This type of grammatical co-occurrence may mirror or constrain the metaphoric mapping. The examples above show that grammar can constrain certain correspondences and that this constraint is not simply due to lexical idiosyncrasies. If we examine such examples in light of the invariance hypothesis it is possible to see that the constraints

described above are a result of limitations imposed by the nature of cross-reference structures. For a brief explanation of the hypothesis we can turn to a summary by Turner (1990: 254):

In metaphoric mapping, for those components of the source domain and target domains determined to be involved in the mapping, [one] preserve[s] the image schematic structure of the target, and import[s] as much image schematic structure of the source as is consistent with that preservation.

Therefore, one can argue that if a source domain is constrained from mapping onto an example of a target domain, then that example belongs to some other target domain. A less strong interpretation of the constraints on the correspondences would argue that there exists a single target domain, with sub-categories of separate and limiting image schematic structures, or topologies.

How may one test for the integrity of a target domain? Moreover, how is it possible to rigorously capture the topological organisation of the target domain or domains? If the topology of a target domain must be preserved in cross-reference mapping, then by following the mapping in reverse, back to the source domain, all the examples of that source domain must map onto all forms of the given target domain. If an example of a target domain will not allow the examples of a source domain to map onto it, then, either the topology of this example is different to the rest of the target domain, or it belongs to a different target domain. Evidently, within the scope of any conceptual domain there are more and less prototypical examples. However, in this situation it seems the examples in question belong to a separate domain, or need to be identified as structurally different from the other examples of that target domain. In other words, if two target domains were proposed for LOVE, such as DURATIVE LOVE and NON-DURATIVE LOVE, then these would be proven to be separate target domains if a set of source domains only mapped onto one and not the other of these concepts.

The argument against this hypothesis lies in the phenomenon of 'highlighting'. Cross-reference mapping uses the topology of a source concept to highlight certain aspects of the target concept. This being the case, one could argue that such limitations are merely part of this process. However, when a set of expressions are consistently mapping to a similar 'sense' of a target domain and will not map to other senses of that target domain, it seems more likely that one is not presented with a process of highlighting, but of differentiation.

In summary, when it can be shown that a set of figurative expressions, of a given source domain, systematically produce infelicitous expressions when mapping to a given

syntactic form and that form represents an identifiable sense, then there exists a separate target domain. It is unimportant whether the concept is re-categorised as two domains, or one domain with two differing topologies, the point here is to reveal structures and patterns in cross-reference mapping through grammatical analysis that otherwise, in lexical studies, would remain hidden.

2.1 Collocation Analysis of LOVE

In order to identify differences across the topology of LOVE one must not only examine the lexical variation, but equally the grammatical variation. The following section will concentrate on the grammatical patterns and co-occurrences of LOVE. To properly understand the lexico-grammatical make-up of the target domain, a complete corpus based collocation analysis is most appropriate. For our purposes, it is enough to examine a collection of some of the most commonly used figurative and non-figurative expressions for LOVE. These will be put into sets of collocates and their features and behaviour in cross-reference mapping will be analysed.

Table 1 offers a paradigm for most of the common syntactic patterns used to describe LOVE. In order to generalise, some symbols are employed. The majuscule X represents *love* or a word/ expression signifying *love*; Y is a modifier of X; round brackets () indicate optional constituent - in post predicate position they also indicate the valency of the verb and the preposition used for the indirect complement; and square brackets indicate lexical variation. The data presented in these tables are the result of the examination of several lexicons which are listed in the bibliography.

Table 1. Syntactic Collocation of LOVE

- | | |
|------------------------------|-----------------------------------|
| 1. be in [Ø, a] (Y) X (with) | 5. have a X (with) |
| 2. be Y with X (for) | 6. have [Ø, a, the, it] (Y) X for |
| 3. become Y with X (for) | 7. have a X on |
| 4. be past participle (by) | 8. fall (Y) in X |

A second table, presented below, expands on these syntactic forms by giving the lexical variation of each construction. Examples of the lexical possibilities for each syntactic form are grouped together as sets of collocates. The most striking feature of this grouping is the large degree of similarity in sense between sets of expressions that have the same or similar syntactic form. This verifies the link of sense and construction that was seen in examples (22) - (27) and discussed earlier in this section. Each construction is identified with a number that corresponds to the number in table 1.

Table 2. Expressions of LOVE based on collocation

<i>EXPERIENCE LOVE</i>	
<p>1. [BE IN LOVE (WITH)] be (Y [hopelessly, foolishly, madly, senselessly, head over heels, etc]) in love (with) be in a relationship (with) be in a marriage (with) be in wedlock</p>	<p>6. [HAVE LOVE FOR] have the hots for have it hot for have a thing for have eyes for have (a burning) desire for</p>
<p>5. (HAVE LOVE (WITH)) have a fling (with) have a relationship (with) have a love affair (with)</p>	<p>7. [HAVE LOVE ON] have a crush on have an eye on</p>
<i>COMMENCE LOVE</i>	
<p>4. [BE LOVE (BY)] be bowled over (by) be knocked out/over (by) be enchanted (by) be bewitched (by) be charmed (by) be enamoured by</p>	<p>2. [BE Y WITH LOVE FOR] be Y [struck, sick, feverish, mad senseless, etc.] with X [love, passion, etc.] (for)</p>
<p>3. [BECOME Y WITH LOVE FOR] become Y [struck, sick, feverish, mad, senseless, etc.] with X [love, desire, etc.] (for)</p>	<p>8. [FALL IN LOVE WITH] fall (Y [hopelessly, foolishly, madly, senselessly, head over heels, etc.]) in love (with)</p>

Although similarity of syntax is the basis of the sets, there seems to be a strong degree of similarity in 'sense' within the groups and differentiation of 'sense' between the groups. This differentiation and similarity in sense is often due to aspectual variation. Such phenomena will become more evident in the analysis that follows.

2.2 Lexico-Grammatical Analysis of LOVE

To test whether these sets of collocates represent different topologies of the concept LOVE we can see if commonly used metaphors for LOVE will map onto them. In order to avoid confusion with the source domain already extant in some expressions it is preferable to use non-metaphorical examples in the tests. However, in some syntactic sets all lexical variants possess a degree of metaphorisation and thus, in these cases, this will not be possible.

It is not necessary for the purposes of the present study to analyse all the forms described in the table above. The examination will briefly focus on a few forms and contrast them. However, some general comments will be made about the possibilities in the other sets of collocates. Four metaphors are 'tested' with four sets of expressions based on syntactic co-occurrence. The metaphors are: JOURNEY; MAGIC; MADNESS; and UNITY. The constructions or sets of collocates are: [BE IN LOVE (WITH)]; [HAVE LOVE (WITH)]; [HAVE LOVE ON]; and [HAVE LOVE FOR]. For the sake of brevity only a small number of examples are given. The 'test' phrases need a few words of explanation.

It is important when seeking 'test' phrases to make certain the metaphor is referring to the same state of LOVE as the construction. A simple example explains this problem clearly.

- (33) I've still got the hots for him, but the magic has gone.

Here, the *magic* is not referring to *having the hots*, but to some other conceptualisation of LOVE. It is for this reason that some people reject this example as semantically awkward. However, with some anaphoric context, the phrase is clearly acceptable:

- (34) Oh, we've been going out for years. I've still got the hots for him but the magic has gone.

Another problem lies in using negatives in test phrases. Consider the following example:

- (35) I've got a crush on him, there's nothing magical about it.

This example does not 'test' MAGIC mapping onto the [HAVE LOVE (ON)] construction. This is because the sentiment is not *magical* because it is a *crush*. However, the following expression shows that a *crush* can be magical.

- (36) I've got a crush on him, it's like a spell.

The following 'tests' are arranged according to their construction. Each construction is matched with each of the metaphors. When a metaphor is semantically awkward with a given construction it is marked accordingly. The examples offered represent the tendency of those expressions that take the given syntactic form. When there is variation across a syntactic set, an example of this variation is given.

[BE IN LOVE (WITH)]:

- (37) a. We've been in this marriage for years but the magic has never gone.
(MAGIC)
- b. Being in love with you is simply bewitching. (MAGIC)
- c. We are madly in love. (MADNESS)
- d. I'm always head over heels in love in this marriage. (MADNESS)
- e. We are one in our love. (UNITY)
- f. To enter into wedlock is to unite two halves that were meant to be together. (UNITY)
- g. We are in love but where is it taking us? (JOURNEY)
- h. For all the years we've been in this relationship I think it's finally run aground. (JOURNEY)

[HAVE LOVE (WITH)]:

- (38) a. I have a great relationship with her, but the magic has gone. (MAGIC)
- b. I'm having a fling with this guy and I'm losing my senses. (MADNESS)
- c. I'm having a fling with this guy, we really connect. (UNITY)
- d. I'm having a relationship with this guy, but it's on the rocks. (JOURNEY)
- e. ?I'm having a fling/love affair with this guy but it's on the rocks. (JOURNEY)

[HAVE LOVE FOR]:

- (39) a. I've got the hots for him. It's like a spell. (MAGIC)
- b. I'm all over the place since I've had a thing for this girl. (MADNESS)
- c. ^{??}I have the hots for this boy. It's obvious we were made for each other. (UNITY)
- d. ^{??}I have a thing for this guy but it's on the rocks. (JOURNEY)

[HAVE LOVE ON]:

- (40) a. I've got a crush on him, it's so enchanting. (MAGIC)
- b. I'm all over the place since I've had a crush on this boy. (MADNESS)
- c. [?]I have my eyes on this boy, it's obvious we were made for each other. (UNITY)
- d. ^{??}I've got a crush on this guy but it's going through a rough patch. (JOURNEY)

The first construction [BE IN LOVE] accepts all four metaphors. Example (43) represents this tendency, producing semantically well-formed phrases regardless of the metaphor employed. The second construction 'tested': [HAVE LOVE (WITH)], example (44), follows the same pattern by accepting all four metaphors. However, there is some variation in this set that seems to be linked to the lexem *relationship*.³ It is also important to note that this is a very different construction from the other HAVE constructions for two reasons: marked difference in aspect and marked difference in the valency of the verb. The construction also takes the same postposition as the [BE IN LOVE] construction. Moreover, in both cases the valency of the verb is variable. Thus, in grammatical terms, this construction shares a great deal with the [BE IN LOVE] form. It does so despite its predicate being the same as the forms [HAVE LOVE FOR] and [HAVE LOVE ON]. Such similarity may explain why it behaves in a similar manner as BE IN LOVE in cross-reference mapping.

Example (39) shows that [HAVE LOVE FOR] accepts two metaphors, MADNESS and MAGIC, but when combined with the metaphors UNITY and JOURNEY it produces awkward phrases. The syntactic similarity of this construction to the next, [HAVE LOVE

ON], tested in example (40), is mirrored by the fact that it also accepts MADNESS and MAGIC, but does not accept the metaphors UNITY or JOURNEY.

From these examples one can see that two of the sets of collocates do not accept two of the metaphors. The constructions [HAVE LOVE ON] and [HAVE LOVE FOR] do not accept the metaphors of JOURNEY and UNITY. Not only are these collocate sets, or constructions, distinct in their constraints on metaphor mapping; these two forms are grammatically similar. Firstly, they are the only constructions that have an obligatory direct complement. All of the other constructions revealed in the collocation analysis have an optional complement. This contrast is demonstrated by example (41). Moreover, as can be seen in example (42), [HAVE LOVE ON] and [HAVE LOVE FOR] share the same aspectual constraints. Unlike the other constructions, neither of these constructions may produce felicitous expressions in the progressive aspects of the tense system.

- (41) a. ^{??}I have a crush.
b. I have a crush on Jean.
c. ^{??}I have a thing.
d. I have a thing for Jean.
- (42) a. ^{??}I was having a crush on Jean.
b. I had a crush on Jean.
c. ^{??}I am having a thing for Jean.
d. I have a thing for Jean.

If one considers the 'sense' of these grammatical constructions, it is not surprising that these expressions cannot be conceptualised as a JOURNEY or as the UNITY of two halves. The constraint of 'non-durativity' offers an explanation for the failure of the mapping of both UNITY and JOURNEY to these forms. It also describes the semantic character of the expressions as a set and places them in semantic contrast to the other sets of expressions for LOVE.

The non-durative nature of these expressions entails a sense of LOVE that is not necessarily a state that lasts for a long period of time. In more familiar terms, this is ephemeral and thus insubstantial love. If such semantic characteristics as non-durative or insubstantial make up the topology of a target domain, it is predictable that the metaphors of UNITY and JOURNEY will not map productively onto this domain. Moreover, the combination of grammatical analysis and the invariance hypothesis means that one can test this set membership and thus the integrity and structure of the domains in question.

If one examines the lexicon and the meaning of the expressions that make up NON-DURATIVE LOVE it is intuitively clear that they are describing a different sense of LOVE. This distinction was proposed at the beginning of the section, but now we have clear grammatical evidence that these expressions are describing something different to the prototypical DURATIVE LOVE. According to the invariance hypothesis, the failure of the two source domains to map onto NON-DURATIVE LOVE means that this concept has a different topology to the other forms that may felicitously accept the mapping. It follows from this that there are two distinct target domains in the conceptualisation of LOVE: DURATIVE and NON-DURATIVE.

A final point that needs to be raised is the abstract nature of these distinctions. By including the type of characteristics that grammar carries in the analysis of cross-reference mapping, one is adding a more abstract dimension to the topology of these concepts. This raises the possibility of developing Langacker's (1987, 1990) tools of grammatical analysis and applying them to the description of conceptual metaphors. In a similar manner that cognitive grammar describes abstract notions such as temporality and voice at a clausal level, such characteristics of conceptual domains may equally be described. It is the techniques of description in cognitive grammar that may reveal the role these abstract 'grammatical' meanings play in conceptual mapping. Such an analysis would need to examine the grammatical characteristics of a source domain when it highlights the grammatical topology of a target domain. Johnson (1987, 1997) shows it is possible, with the theory of image schemata, to accurately describe the features and interaction of abstract concepts grounded on embodied experience. Moreover, Clausner & Croft's (1999) current work on the relationship between metaphor and schema per se lead us towards the possibility of finally pulling many of the analytical approaches of cognitive linguistics together. The type of characteristics revealed in the present study may allow these approaches to grammar and schema to be applied to description of more abstract concepts such as LOVE.

For example, one may apply the same principle to the description of source domains. If one examines the set of collocates 4 in table 1, which are based on the BE + past participle + (BY) construction, two source domains are visible. Firstly, there are the expressions employing the metaphor of MAGIC, such as *enchanted by* and *bewitched by*. Secondly, there is a set of expressions including examples such as *bowled over by* and *knocked out* that share the more abstract notion of punctual aspect. If one considers the effect these verbs have on the patient of the action, then it is possible to identify aspectual distinctions that explain the topology of these source concepts.

In the expressions employing the MAGIC metaphor, the patient undergoes a change of state that starts at one moment and then continues to an unspecified point. In the study of verbal morphology, this is sometimes referred to as secantive aspect. The other constructions describe a change of state with a punctual aspect. In these instances, the verb focuses on the point of change with no room for internal temporality. Thus, one may describe one of the features of the MAGIC metaphor as SECANTIVE. This allows the description to distinguish these two concepts aspectually, by PUNCTUAL versus SECANTIVE. Such characteristics are productive if one is examining cross-reference mapping in terms of image schemata. The possibility of describing the behaviour of grammar in cross-reference mapping with the theory image schemata deserves more investigation but is beyond the scope of the present study.

A current song in popular music has the chorus and title: *It must be love*. Here the proposition entails the existence of something similar to love but which is, in reality, not love. This example reiterates that the concept LOVE is distinguishable and marked in its contrast to some other similar concept. The example serves to remind us that one must not confuse highlighting in cross-reference mapping with distinguishable target concepts. It seems likely that the song's words are distinguishing DURATIVE LOVE from NON-DURATIVE LOVE. Thus, one can see an example of the results drawn out of the lexico-grammatical analysis offered by this study.

Differences in target domains have been discussed before. Both Kövecses (1990) and Lakoff (1987) discuss the ideas of prototypical cases and less prototypical cases or scenarios in the target domains of concepts. The present results suggest that this is insufficient to account for the limiting factors revealed by applying the invariance hypothesis to the morpho-syntax of the correspondences of LOVE. Even if one rejects this proposal, the application of the invariance hypothesis, and the recognition of the role of grammar in cross-reference mapping is theoretically essential. The consideration of these factors also clearly offers an important means for understanding the internal organisation of cross-reference mapping.

3.0. Conclusion: Lexico-grammatical analysis of conceptual domains

The solution to the problems outlined in section 1 lies in an analysis of the grammar. This, it would seem to many in cognitive linguistics, is all too obvious. It is a common belief that the various levels of language structure, such as lexicon, morphology, and syntax, can only be arbitrarily separated. To separate these levels of language is to miss much of the important linguistic structure. This belief is central to the theoretical paradigm that supports conceptual metaphor theory. Langacker (1987, 1990) describes the relationship between the

grammar and semantics as a continuum that is inseparable, except arbitrarily. His theory explains processes such as subjectification and semantic bleaching. Talmy (1988, 2000) argues differently, positing two separate systems, yet structurally co-dependent and inseparable for the purposes of analysis. The role of these phenomena in the analysis of conceptual metaphors needs much more attention and clearly, as this discussion has shown, there is great scope for introducing such questions into the field of metaphor study. The fundamental argument of both positions stresses the inextricable nature of the various linguistic systems. This study further demonstrates this hypothesis.

Likewise, the study's incorporation of morpho-syntactic issues into the study of metaphor makes the need to account for other approaches to 'meaning in form' all the more obvious. Studies of grammatical motivation and iconicity such as those presented by Haiman (1985) and construction grammar of Goldberg (1995) clearly need to be considered in light of conceptual metaphor theory.

Finally, this discussion reveals how grammar informs an analysis of cross-reference mapping. The examination of the syntax and morphology of a conceptual domain offers the extra information necessary to verify and differentiate the results achieved from the analysis of co-occurrence in the lexicon. It may also reveal structures of cross-reference mapping that are not visible at a lexical level. Above all, the results underline the need to investigate the role of morpho-syntax in cognitive semantics.

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Notes

¹ All examples are constructed for the study and verified with a range of native British English speakers.

² Note that although this example is clearly unacceptable, some English varieties have acceptable phrases such as: *She had a crush on him but she's had it with him now* and *She had a crush on him but she's over him/it now*. The construction can be forced with the following context: *She had a crush on him but it ended when she...* However, drawing our attention to the temporal content still produces a questionable expression: [?]*She had a crush on him but it came to an end when she...* This may be a result of the aspectual information being simplified by the pronominal summary of the conceptualisation to which *crush* refers. Clearly, more examination of such examples is necessary to completely understand the grammatical constraints in question.

³ The word *relationship* seems to represent a point of overlap. Indeed, it is the only lexeme in this set that also occurs in the BE IN LOVE form. It is likely that this term is in a state of change from the less durative domain of collocates such as *fling* and *love affair* to the more durative senses of *marriage* and *wedlock* that are conceptualised by the container metaphor.