

# The Role of Linguistic Frequency Effects in Shaping Metaphorical Systems

Daniel R. Sanford

*University of New Mexico*

The functionalist view of language has arisen from analysis of the effect of repetition on the storage and processing of language at a variety of levels of linguistic structure. Applied to metaphor, the approach places metaphorical conventionalization at the center of our understanding of metaphor, explaining several important aspects of metaphorical systems (their internal systematicity, the gradedness of metaphor, the idiosyncrasy of conventionalized metaphorical utterances, and others) as arising from the cumulative effect, over time, of frequency effects at the level of both conceptual mappings and utterances. Ray Gibbs has argued that such a view of metaphor ignores the essential contribution to our understanding of metaphorical systems that comes from semantic factors, and above all else the nature of metaphor as following from embodied cognition. In this article, I respond to several of Gibbs' major objections to Emergent Metaphor Theory. In responding to these concerns, I take the position that embodiment and other cognitive factors must indeed be included in a full accounting of metaphor. I argue that a frequency-based account of metaphor is fully compatible with semantic factors, and moreover that the aspects of metaphor which follow from frequency effects are essential, defining attributes of metaphorical systems.

*Key words: Emergent Metaphor Theory, metaphor, frequency, conventionalization, exemplar, schema, emergence, embodied cognition*

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What is the relationship between the metaphors in our mind, and linguistic utterances? Do figurative utterances merely reflect underlying metaphorical systems, or do they have a role in shaping these systems? In 2013, Dr. Ray Gibbs published a piece in this venue (Does Conceptual Metaphor Emerge from Metaphoric Language?), a reaction to two of my own papers (Sanford 2013, 2014) that also appeared in *Journal of Cognitive Science* and which together lay out Emergent Metaphor Theory. I'm grateful to Dr. Gibbs for the insightful critique, and for the opportunity to clarify a few points in my own work. My responses to what I've read as Gibbs' main criticism are below. Overall, I agree in essence with Gibbs' argument that there are important aspects of metaphor that do not follow from the frequency-based approach, and that in these cases it's essential to appeal to other explanations as to the nature of metaphorical systems. I agree further that embodiment is foremost among these. I believe that several of the differences between Gibbs' approach to metaphor (which follows from Conceptual Metaphor Theory) follow from differences in opinion as to what the most important attributes of metaphors and metaphorical systems are. I argue that those aspects of metaphor which follow from the operation of frequency effects at both the conceptual and surface level are core aspects of metaphorical systems.

Emergent Metaphor Theory (EMT) (Sanford 2012, 2013, 2014) is a usage-based theory of metaphor, akin to frequency-based accounts of other aspects of linguistic structure (Greenberg 1966, Bybee 1985, Langacker 1987, Croft & Cruse 2004, Givón 1984, Hawkins 1994, Lindblom, MacNeilage, & Studdert-Kennedy 1983). The approach is in line with Bybee's account of linguistic frequency effects as following from the interacting effects of type and token frequency (Bybee 1985, 1995, 2001), and modeling of storage and processing within exemplar theory (Pierrehumbert 2001, Croft 2007). EMT posits that metaphorical conventionalization takes place at two levels, semantic and syntactic. At the semantic level, which corresponds to conceptual metaphors (Lakoff & Johnson 1980, Lakoff 1993), both connections across semantic domains (ARGUMENT IS WAR) and specific concept-concept-mappings (making an argument is attacking) become entrenched through repetition. Every instance of exposure to a given mapping in discourse causes the metaphor to be more productive,

more easily accessed, and more likely to serve as a basis for assessing the acceptability of utterances. At the syntactic level, specific figurative utterances (both individual words, and multi-word collocations) become associated with specific figurative meanings and assume relatively fixed forms through repetition. All of the above correspond to well-attested effects from frequency at other levels of cognition, both linguistic and non-linguistic, and indeed a major strength of EMT is its modeling of metaphor using processes that are well-attested in cognition more generally. As a theory of metaphor, EMT has the strengths of providing a coherent account of metaphorical conventionalization (caused by direct, entrenched mappings forming direct processing routes), and in particular of the highly entrenched, idiosyncratic meaning associated with idiom (caused by a degree of autonomy of idioms from metaphorical schemas). It accounts explicitly for the continuous, non-binary nature of metaphoricity, to speakers' intuition that some utterances are more metaphorical than others, and to the well-attested ability for even highly fixed idioms to be manipulated productively in discourse.

The central objection raised by Gibbs is that **EMT does not provide an adequate account of why certain words and phrases have the meaning that they do**: there are clear, semantically motivated patterns to metaphorical systems, and frequency effects cannot account for many of these. Gibbs identifies embodiment in particular (the tendency for metaphors to be rooted in the direct experience of inhabiting a body and occupying physical space) as an important factor in describing metaphor. This aspect of metaphor was one of the central insights of Conceptual Metaphor Theory, and has been elaborated in a tremendous body of literature in the decades since. This aspect of metaphor itself follows from another tendency: metaphor conceptualizes the abstract in terms of the concrete. Sanford (2008) tested this key claim of CMT, finding in a corpus study that there is a positive correlation between the abstractness of a concept and the frequency of it being referred to metaphorically, and that in metaphorical utterances source domains tend to be more concrete than target domains. There are, without doubt, other such tendencies in metaphor as well. These are inescapable aspects of metaphorical systems, and they are indeed not strictly predicted by a usage-based account of metaphor.

There are non-frequency-based aspects of metaphor that play a clear role in speakers' determination of the aptness of metaphor.

In no way, however, are these factors *incompatible* with a usage-based account of metaphor. Undoubtedly, metaphorical utterances are patterned in a way that suggests a strong preference for grounding abstract concepts in terms of concrete ones—and the most concrete experiences that we as humans have to draw on is the immediate, physical experience of inhabiting a human body, existing in physical space, and directly manipulating the reality around us. The arguments advanced in *Metaphors we Live By* have framed the debate on metaphor for 35 years because they ring, in many ways, true. Lakoff & Johnson laid out a number of extremely compelling insights into metaphor, which have been repeatedly borne out and greatly elaborated in metaphor scholarship to the present. Any adequate theory must take into the essential aspects of metaphor that have been presented within Conceptual Metaphor Theory and related approaches.

But these aspects of metaphor are not the only important aspects of metaphor, and the field of metaphor research is not well served by the dogged insistence that they are. There are other essential aspects of metaphor as well, and foremost among these is that metaphorical speech, like everything else that comes out of our mouths, is astonishingly repetitive. It follows reliable patterns, and it is overwhelmingly the case that when we speak metaphorically, we *don't* explore the vast space of possible utterances that might be sanctioned by our metaphorical systems. For any given metaphorical mapping, we refer to source domain concepts using the same handful of words, phrases, idioms, and specific source-target connections—and the older and more deeply entrenched the mapping, the more this is the case. These and other aspects of metaphor that follow from a usage-based approach are, if not more important, certainly not any less so than aspects of metaphor highlighted by CMT.

Most importantly, however, Emergent Metaphor Theory does *not* leave out other factors—it simply weights such factors heavily toward the beginning of the careers of metaphors. A key aspect of emergentist approaches to language is that both the processing and storage of language are redundant. Speakers are able to process utterances through analysis of their composite parts, but through repeated exposure to an utterance,

the more direct processing route— the association of a word, idiom, construction or other unit with a gestalt meaning— comes to the fore. For metaphor, the correlate is that early in a metaphor's career, connections between conceptual domains are formed, and new utterances are coined through analogical reasoning. The more a metaphor becomes incorporated into a speech variety, however, the more it is expressed through set patterns: a direct processing route that provides a narrow frame for interpreting connections between domains, and associating utterances with conventionalized meanings, form (a hypothesis supported by Ahrens, Liu, Lee, Gong, Fang, & Hsu 2007, which uses MRI data to show significant differences in processing for conventional and novel utterances).

In the early part of a metaphor's career, more semantically oriented criteria are prominent. I agree with Gibbs that embodiment is foremost among these, and I suggest that the more general preference for sources to be more concrete than targets, as well as speakers' appreciation for novelty, are important as well. Kövecses (2015), in a paper that provides a number of very helpful refinements of EMT, argues for the following list of non-frequency factors that must be taken in to account: elaboration, specificity, transparency, experiential focus, viewpoint preference, prototype categorization, and metaphor vs. metonymy preference.

Gibbs is correct in asserting that EMT is not, primarily, a semantic theory of metaphor. In the same way that biological evolution is a theory of how organisms change across generations as opposed to how life emerged, EMT is primarily a theory of diachronic change in metaphor, and how extant systematicity in metaphorical systems is a result of this change. Semantic and other factors that bear on metaphorical variation are neither explicitly addressed in EMT, nor are they incompatible with it. Ultimately, a 'Grand Unified Theory' of metaphor will account fully for *all* factors that bear on variation in metaphor. It's my belief that EMT, in that it describes the operation of frequency effects and that these account for some of the most important facts about metaphor, is closer to such a unified account than any theory that does not explicitly account for the role of frequency effects.

I take next what I see as Gibbs' two most prominent objections: **that EMT does not adequately account for the on-going role of underlying metaphors in the processing of metaphorical utterances**, and that

**EMT does not account for ways that metaphor can be manipulated in discourse, based on underlying metaphor**, treating them together in that they are highly related. I'm grateful for the opportunity to address these points, because they're important ones: EMT is not a theory of metaphor that limits metaphor to a historical role, driving the formation of idioms and expressions but no longer active in on-line processing. Rather, EMT asserts (like CMT) that the metaphorical underpinnings of idiomatic expressions, formulaic metaphors, and conventionalized expressions alike are routinely activated as speakers engage in figurative language, and take an active role in shaping discourse (Nayak & Gibbs 1990, Coulson & Van Petten 2002, Bowdle & Gentner 2005, Gong & Ahrens 2007).

Within EMT, metaphorical mappings are schemas that form over groups of related utterances. As speakers are exposed to tokens of use, they form connections over experienced tokens of metaphor according to well-attested principles of categorization. A category might form in a speaker's mind, for example, over utterances invoking machinery as a source domain, or which refer to human intelligence. At the intersection of the two categories, a metaphorical schema forms over utterances that invoke the source domain of machinery to refer to the domain of human thought. Metaphorical schemas become strengthened as speakers are exposed to further tokens that can be aligned with the schemas. As schemas are strengthened, they are subject to three domain-general frequency effects (Bybee 1985, Moder 1992, Pierrehumbert 1994, Dabrowska & Szczerbinski 2006, Wang & Derwing 1994): strong (frequent) schemas become more likely to serve as a basis for creating new forms. They become more acceptable, likely to serve as a basis for determining the acceptability of new forms to which speakers are exposed. And they become more accessible, or more rapidly accessed by speakers in on-line processing. These three predictions about metaphorical schemas were tested in Sanford 2013, which reports a series of experiments that tested the productivity, acceptability, and accessibility of metaphorical utterances instantiating metaphorical schemas of varying degrees of frequency, finding that the strength of metaphorical schemas (as determined by their frequency) has a highly direct and measurable impact on speakers' on-line processing of metaphorical utterances. EMT *does* assert that the direction of causality

asserted by CMT, with underlying mappings licensing surface expressions, should be reversed, with us rather conceptualizing metaphorical schemas as shaped by language in use. But it is far from the case that metaphorical mappings, once formed through the effects of linguistic frequency, become static. Schemas are dynamic, constantly being shaped through language in use, and becoming stronger as speakers are exposed to further tokens of use. They are subject to the formation of sub-schemas within themselves (which, given sufficient frequency, can weaken the overarching schema). And these schemas, critically, are vitally active in the on-line processing of figurative language. They are invoked constantly, driving speakers' (who find the strongest schemas most accessible) decisions as they cast about for appropriate language to refer to a given concept, choosing the right source for a given target, and the right word/expression for a given concept. They determine the ease with which a speaker will interpret a metaphorical expression, and whether she will find a given utterance to be acceptable, native-sounding, and fluent.

Frequency, however is complex. The simple frequency of speaker's exposure to tokens of use that align with a given pattern corresponds to the pattern's type frequency. There is a simple, direct relationship between the type frequency of a pattern and the strength of the schema that is emergent over the pattern, such that schemas with high type frequency have concomitantly high strength. Frequency effects can also apply, however, at the level of sub-schemas, with patterns at narrower levels of schematicity (for example, metaphors relating human cognition to cars relative to the larger pattern of metaphors relating human cognition to machinery) themselves being subject to frequency effects. And specific, set strings (in the case of metaphor, corresponding to specific, set mappings of concepts from a source domain to concepts from a target domain) accrue in token frequency (the frequency of particular linguistic items). At either level, high frequency (either of a sub-schema, or of an item) effects *autonomy*, whereby the sub-schema gains in strength relative to the overarching schema, becomes entrenched in its own right, and often takes on idiosyncratic properties not predictable from the overarching schema. The connection to the overarching schema is preserved, never becoming fully inactive (which is to say, it is always activated in online processing). But the connection to

an overarching schema can become highly tenuous, the high frequency of a sub-schema or item effecting an autonomy which means the overarching schema is activated to a lesser extent. A dual processing route has here emerged: the processing of the utterance via the overarching schema is automatic. At the same time, however, processing according to the frequent sub-schema or item may be more proximate or stronger (thus, for example, there is a highly routinized route for processing the highly autonomous and conventionalized string *I see*, even as UNDERSTANDING IS SEEING is activated). Even for highly conventionalized figurative expressions, then, activation of instantiating metaphorical schemas takes place, albeit weakly. The highly entrenched (and therefore more rapidly and strongly accessed), autonomous (and therefore likely to have a meaning not fully predictable from the larger schema) processing route for the string itself, meanwhile, is likelier to take a front seat in driving interpretation of the utterance in discourse.

Despite the direct processing route, the fact that even highly entrenched figurative utterances are connected to metaphorical schemas has important repercussions in discourse. The behavior of schemas is affected by language users' 'deep' language experience, their exposure across time to tokens of use that participate in the schemas. Schemas are also, however, acted upon by language users' 'shallow' experience of use, in the form of the local context of immediately preceding discourse. Schemas are activated by exposure to tokens of use that participate in the schema. This has the effect of semantic priming: once a schema (for our purposes, say, THE MIND IS A CONTAINER FOR OBJECTS) is introduced, tokens of use that participate in the schema (e.g., *he spilled the beans*), even when they are highly entrenched themselves, activate the schema and cause it to be more likely to repeat in the discourse as speakers find the activated schema easier to draw upon. For metaphor, this effect is exacerbated by speakers' very conscious use of metaphor, and appreciation for clever usage. The combination of these effects means that even highly fixed idioms can, once activated in a discourse, reoccur and be manipulated to create novel meanings as the underlying metaphor is exploited. A number of studies have shown that idioms can be processed compositionally given appropriate context (Nunberg et al. 1994, McGlone, Glucksberg, & Cacciari 1994), indicating



that the latent metaphorical schemas underlying idiom are ‘recoverable’ via semantic priming. The best evidence for semantic priming itself for metaphor and metaphorical idiom comes from Gibbs, Bogdanovich, Sykes, & Barr (1997), who report that subjects recognize words and sentences faster when the metaphorical schema motivating their figurative meaning had been previously activated.

Billig & MacMillan (2005) show the effect in discourse, in a corpus study that demonstrates the propensity for idiom to be manipulated and used to explore new metaphorical meanings in discourse. Following the use of *smoking gun* in the public discourse around the search for weapons of mass destruction in the second Iraq War, the authors present the following usages, which (along with other citations) fall along a wide range between the conventionalized meaning (‘evidence of wrongdoing’) and highly nuanced variations thereof:

‘If the international community sees that Saddam Hussein is not cooperating in a way that would allow you to determine the – the – truth of the matter, then he is violation of the U.N. Resolution 1441. So you don’t really have to have a smoking gun’ (NBC Nightly News, 9 January 2003).

‘Well, the problem with guns that are hidden is you can’t see their smoke’ (Guardian, 10 January 2003).

‘A Downing Street spokesman insisted the so-called smoking gun, evidence of a continuing concealed weapons programme, was not the only justification for war set out in Resolution 1441’ (Guardian, 27 January 2003).

‘What do you mean by a smoking gun? How about lots of smoke? I think I put forward a case today that said there’s lots of smoke. There are many smoking guns. When we say that he has had thousands of litres of anthrax, and we know it – he’s admitted it, it’s a matter of record, there’s evidence, there’s no question about it – is that a smoking gun? Is it a smoking gun that he has this horrible material somewhere

in that country and he's not accounted for it? And the very fact that he has not accounted for it, I say could be a smoking gun. It's been a gun that's been smoking for years' (60 Minutes, 5 February 2003).

In the first instance, while a metaphorical schema is being activated, the direct, well-entrenched, highly conventionalized processing route linking the form *smoking gun* to the meaning 'evidence of wrongdoing' is at the fore. The others reflect subtle manipulations of idiomatic meaning based on the metaphorical schema itself. Interpretation is dependent on parsing out aspects of metaphorical meaning over constituent elements, and on analogical reasoning over speaker's knowledge of wrongdoing and of the firing of guns.

Gibbs maintains that **EMT does not provide an account of how metaphors came historically in to being**. I'd argue, rather, that EMT accounts explicitly for the way in which novel metaphors become a part of the lexicon of a speech community, becoming instantiated over time in expressions, words, and utterances at varying degrees of conventionalization and fixedness. Speakers coin novel metaphorical utterances and develop their systematicity according to analogical reasoning, a process wholly under speaker's conscious control and highly subject to semantic factors (including embodiment). Semantic factors also play a role as speakers are exposed to new metaphors and determine their aptness. As speakers are exposed to novel metaphorical utterances, they attempt to align them with existing metaphorical schemas on the basis of semantic similarity to other items in the schema. Where a relevant schema is found, processing of the new utterance takes place according to it (which may yet leave, given that the utterance itself does not yet have an entrenched interpretation, ambiguity as to the literal meaning of the expression— a common experience for speakers in discourse). Where a relevant schema is not found, speakers apply analogical reasoning, guided by their knowledge of other, similar metaphorical schemas. Over time, as those utterances that are particularly apt, or emulated on the basis of the social status of the original speaker, or which for any other reason reoccur, come to be conventionalized as specific concept-to-concept mappings and fixed strings reoccur. Thus, within a family of metaphors related by a single conceptual schema, highly

novel utterances and highly fixed expressions can co-occur.

Gibbs also makes the case that **EMT provides no theory of how people, especially children, come to acquire an understanding of metaphoric language**. EMT is actually rather particularly useful for explaining the acquisition of metaphor by children, and the way in which the types of metaphorical systems described by Lakoff & Johnson are propagated across generations. Children start without metaphorical schemas. As they are exposed to language in their environments, they accrue tokens of metaphorical language in use. Categories form on the basis of semantic categorization across utterances that either refer to, or are predicated on, similar concepts, and narrower categories over groups of utterances where specific domains of thought (HAPPINESS and UP, for example, or COGNITION and PERCEPTION). Human minds identify patterns as they are exposed to repeating units, and those units of perception become the units of storage. As children are exposed to more and more tokens of use, schemas form over groups of similar utterances, and individual schemas are strengthened and entrenched at varying levels according to their type frequency. Slowly, over time, children develop systems of metaphorical schemas that align with those of other members of the speech community (since, after all, they are being exposed to linguistic data that has metaphorical schemas occurring at similar levels of frequency). A number of studies from the 1970s forward (Billow 1975, Nippold and Sullivan 1987, Broderick 1991, Vosniadou et al. 1984, Siltanen 1989, Evans and Gamble 1988, Waggoner and Palermo 1989, Seitz 1997) have converged on the finding that while the capacity for metaphor emerges early in children, they tend to interpret metaphors in a way different from adults until considerably later in their development as speakers. These findings make sense, considering that while children may develop the cognitive capacity for metaphor early, their internal, schematically predicated systems of metaphor won't align (and thus their interpretations of metaphorical utterances won't align) with adult speakers until they have been exposed to sufficient tokens of use.

Gibbs raises the criticism that **EMT does not make explicit the role of non-linguistic metaphors upon metaphorical schemas**. Citing a variety of research (Cienki & Mueller 2007, Forceville & Urios-Aparisi

2009, Gibbs 2008) showing the way that metaphors play out across both language and other media (art, music, dance, and others), he notes that EMT does not describe the connection between linguistic and non-linguistic metaphors. This is a very valid criticism of the theory: if exposure to linguistic metaphors is what drives the formation of metaphorical schemas, then what is the role of non-linguistic metaphors? Are they independent of non-linguistic metaphors (unlikely, given clear instances of conceptual metaphors playing out with a shared systematicity across multiple modes of expression)? Are metaphorical schemas shared across multiple media, but shaped only by linguistic metaphor? Do metaphorical tokens of use shape the representation of schemas, regardless of medium? Can schemas that link conceptual domains also span modes of expression? These are important questions to raise. Schemas are pairings of form to meaning, and in the application of the idea of a schemas at other levels of linguistic structure (phonology, morphology, syntax) it's been clear that the 'form' half of the pairing always describes a linguistic unit. There's nothing inherent in the idea of a schema however (as articulated by Langacker, Bybee, Goldberg, and others) that explicitly limits the form associated with a schema to linguistic expression. Given this, and given cognitive linguistics' ongoing success in the assumption that language operates on more general cognitive principles, I'd predict it to be the case that schemas linking conceptual domains span linguistic and non-linguistic domains, and that tokens of use in any mode of expression affect the representation as a whole. The evidence collected and presented in Sanford 2013 does not bear on the question, as the study looks only at the frequency of linguistic expressions of a given metaphor. The questions merits further study, which should proceed on the hypothesis that conceptual schemas are not language-specific.

Gibbs asserts that **EMT does not account for the systematicity of metaphor**. The rich internal structure of metaphorical systems, with certain metaphors nesting within others in hierarchies that can contain many levels and branches, is indeed an essential, inescapable attribute of metaphorical systems. CMT treats these relationships as entailments, with the overarching metaphor (e.g., STATES ARE LOCATIONS) licensing more specific ones (e.g., HARM IS BEING IN A HARMFUL LOCATION). EMT treats this

feature of metaphorical schemas as a consequence of how the systems arise: schemas emerge as generalizations over repeated patterns, and redundancy of storage is an essential aspect of a schema-based view of language. Where utterances A, B, and C form a pattern (linking the same two domains, or concepts, using related linguistic forms), and utterances A, B, C, D, and E share a more general pattern, nothing precludes the emergence of two related schemas. The dynamics of nested schemas is extremely important to metaphorical systems, and while the attributes of systems of metaphor follow intuitively from the emergence of schemas over repeated units of language in use, there are two aspects of such systems which have proven difficult to handle in non-frequency-based accounts and which CMT in particular is ill-equipped to handle.

First, nested schemas often have properties that are not predictable based on overarching schemas. If metaphorical schemas that fit within other metaphorical schemas are indeed special cases, or entailments, then we'd expect it to be case that the properties of subordinate schemas would follow from the properties of more general ones. This is often, however, not the case: special cases of metaphors tend to have unique properties. Consider, for example, the following examples taken from the Corpus of Contemporary American English (Davies 2008):

'Men are dogs' (COCA 2009, 'Aussie Rules').

'For a boy she's kind of cute, but for a girl she's a dog' (COCA 2000, 'Fiction Crushed').

A large number of English utterances are linked by the broad schema PEOPLE ARE ANIMALS, which generally profiles negative attributes of animals. 'Men are dogs' focuses on one specific attribute of dogs (selfish opportunism). 'She's a dog', on the other hand, profiles a separate one (homeliness). Both are consistent with the more general schema PEOPLE ARE ANIMALS, but both have meanings that wouldn't be predictable to a speaker only familiar with the more general schema.

The second is what Grady (1997) describes as the poverty of mapping: for any conceptual metaphors, large portions of internal systematicity are

unexplored by speakers. THEORIES ARE BUILDINGS for speakers of English, yet they don't speak of them as having windows, doors, or other universal aspects of buildings. HAPPINESS IS UP, yet speakers tend not to position themselves relative to one another, in their levels of happiness, using relative pronouns (*\*I'm above/below her*). IMPEDIMENTS TO AWARENESS ARE IMPEDIMENTS TO SEEING, yet we don't figuratively correct such problems using corrective lenses (we could, and indeed such a usage might be, depending on context, perfectly comprehensible to a native speaker— but we *don't*, and such a novel usage would need to be processed using analogical reasoning). As with the first case, this aspect of metaphor is only problematic if we view special cases of metaphor, or specific concept-to-concept mappings, as following via inference from overarching metaphors. If the direction is reversed— if specific concept-to-concept mappings and narrowly defined metaphors form as generalizations over smaller sets of utterances, and larger mappings are schemas forming over utterances instantiating any number of such more specific cases—then these aspects of metaphor are simply emergent properties of the way they form. When we express concepts in metaphor, we don't fill in unexplored gaps in metaphorical systematicity. Rather, we return, again and again, to the same words, mappings, and expressions to invoke metaphorical concepts.

And this issue, ultimately, is one that underlies much of the difference between Conceptual Metaphor Theory and Emergent Metaphor Theory. Much as the generative school of syntax has focused on the endless possible productivity of human language, adherents of CMT and CMT-inspired approaches have focused on contrived examples. A dependence on such examples (sentences created by linguists, and which are deemed acceptable to native speakers based on their own intuitions) leads to a vision of metaphor that is not aligned with actual language use. Gibbs, for example cites the following contrived sentences as examples of ROMANTIC RELATIONSHIPS ARE JOURNEYS: *our marriage is on the rocks, we are going nowhere in this relationship, the marriage hit a dead end street, we are traveling down the highway of love with the wind behind our backs, and my girlfriend and I decided to go our separate ways*. In the Corpus of Contemporary American English, *marriage is on the rocks* occurs 8 times.

*Going nowhere in this relationship* is unattested, as is *marriage hit a dead end street*, and *highway of love*. Of 29 instances of *go our separate ways*, 1 refers to romantic love. Most of these examples are so vanishingly rare as to be unattested in a corpus of 450 million words. If these aren't things that speakers say, then of what value are they in providing insight in to the properties of ROMANTIC RELATIONSHIPS ARE JOURNEYS? Of what value are they in providing insight in to the properties of metaphor? How much trust should we place in the view of metaphor that naturally arises from a dependence on contrived examples, stressing the endless productivity of metaphor?

When we look at naturally occurring discourse, on the other hand, a different picture of metaphor emerges: instances of Lakovian conceptual metaphors for referring to emotion are exceedingly rare (Sanford 2008). People use the same words and expressions over and over again to invoke metaphorical meanings (e.g., it's always *illuminate*, and never *shine*, that's used to refer to making a concept lucid for someone). The vast majority of instances of metaphor are highly formulaic, with speakers repeating the same expressions over and over (Deignan 2005, Sanford 2008). And large portions of the logically possible space defined by conceptual metaphors are unexplored by speakers. The value of corpus linguistics is that it reliably yields insights about language that fly in the face of our intuitions (Ahrens 2011). Corpus work on metaphor, as opposed to contrived examples, yields a different view of metaphor, one that makes central the role of repetition and its effect on processing. Gibbs' central claim is that "bodily experience plays a crucial role in motivating why people speak metaphorically in the specific ways they do, and that metaphoric concepts... do not solely emerge from instances of metaphoric language use." This is an argument with which I wholly agree. Emergent Metaphor Theory elaborates those aspects of metaphor that *do* emerge from metaphoric language in use, and asserts that these aspects are far more important than they've been treated in the literature of metaphor to date.

The human capacity for recognizing patterns, and the way that units to which we are repeatedly exposed become the stored units whereby we process experience, is a fundamental aspect of human cognition. Usage-based approaches that highlight the role of repetition in determining how

language is stored and processed are profoundly complementary to the cognitive paradigm, and indeed exemplify it by explaining language using more general cognitive principles. Across phonology, morphology, and syntax, such approaches have had a tremendous impact on how many scholars of language view the relationship between language in its stored and expressed forms, replacing a view whereby the former determines the latter with a view in which the two exist in a dynamic relationship, each affecting and being affected by the other. For metaphor, the approach repositions metaphorical conventionalization and the non-binary nature of metaphor—highly intuitive and apparent aspects of metaphor—as central, defining aspects of metaphor, even relative to such important principles as embodiment.

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