Blending and coded meaning: Literal and figurative meaning in cognitive semantics

Seana Coulson [a,*], Todd Oakley [b]

[a] *Department of Cognitive Science, 9500 Gilman Drive, La Jolla, CA 92093-0515, USA*
[b] *English Department, Guilford 106B, Case Western Reserve University, Cleveland, OH 44106-7117, USA*

Abstract

In this article, we examine the relationship between literal and figurative meanings in view of mental spaces and conceptual blending theory as developed by Fauconnier and Turner [Fauconnier, Gilles, Turner, Mark, 2002. The Way We Think: Conceptual Blending and the Mind's Hidden Complexities. Basic Books, New York]. Beginning with a brief introduction to the theory, we proceed by analyzing examples of metaphor, fictive motion, and virtual change to reveal various processes of meaning construction at work in a range of examples that vary in their figurativity. While a dichotomous distinction between literal and figurative language is difficult to maintain, we suggest that the notion of coded meaning is a useful one, and argue that coded meanings play an important role in the construction of conceptual integration networks for literal and figurative meanings alike. In addition, we explore various notions of context as it pertains to literal and figurative interpretation of language, focusing on Langacker's concept of *ground*. We suggest that there is much to be gained by explicating the mechanisms by which local context affects the process of meaning construction.
© 2005 Elsevier B.V. All rights reserved.

Keywords: Conceptual blending; Literal meaning; Metaphor; Fictive motion

1. Introduction

Recently, while preparing a presentation, we came upon a curious graphic at a commercial clip art website. Filed under "Business Metaphors", and entitled

---

* Corresponding author.
  E-mail addresses: coulson@cogsci.ucsd.edu (S. Coulson), todd.oakley@case.edu (T. Oakley).

''Scrutinizing a Business'', the graphic depicted a microscope with what looked to be a miniature factory on the mount where the specimen slide normally sits. It struck us that the clip art was a prototypical example of a conceptual blend, a meaningful object that involves the integration of information from disparate domains (Fauconnier and Turner, 1998, 2002). In this case, the domains are visual inspection and business practices. Moreover, while the graphic was clearly intended to be interpreted *metaphorically*, the artist had in fact produced an almost hyper-literal depiction of the phrase ''Scrutinizing a Business''.

This prompted the hypothesis that literal meaning, as it is colloquially named, plays an important role in guiding the construction of blended cognitive models. Interpreting these blended cognitive models, however, requires the recruitment of a large stock of extra-linguistic information, including background knowledge, knowledge of conceptual metaphors, and local contextual information. One needs to know, for example, that scrutinizing involves the critical examination of an object, and that it can be used in the KNOWING IS SEEING metaphor (see Lakoff and Johnson, 1980; Sweetser, 1990). Local context is also crucial for interpretation, as the precise object of scrutiny will differ as a function of the context of use. If, for instance, an accountant for a company placed the clip art on her door, it might be interpreted as pertaining to company finances. If posted on the manager's door, it might be interpreted as pertaining to worker productivity. Alternatively, if the sign were pasted on the door of the company's officer in charge of safety, it might be understood as pertaining to worker safety.

In this paper, we examine the relationship between literal and figurative meanings in view of conceptual blending theory as developed by Fauconnier and Turner (2002). Moreover, we examine the way in which contextual factors figure into the meaning construction process to yield the *derived meaning* of a given utterance, a fully contextualized interpretation of an utterance and its significance, relevance, and function within an ongoing discourse. We begin with a brief explanation of our treatment of the terms literal and non-literal meaning, and follow with an introduction to conceptual blending theory. We go on to analyze examples of metaphor, fictive motion, and virtual change to reveal various processes of meaning construction at work in figurative language. While a dichotomous distinction between literal and figurative is difficult to maintain, we suggest the notion of literal meaning has its utility. Moreover, one aspect of literal meaning, *coded meaning*, plays an important role in the construction of conceptual integration networks in blending theory. In addition, we explore various notions of context as it pertains to literal and figurative interpretation of language. We suggest there is much to be gained by explicating the mechanisms by which local context affects the process of meaning construction.

1.1. The literal–non-literal distinction

Bach (1999) notes that the distinction between semantics and pragmatics is easier to apply than it is to explain. Similarly, the distinction between literal and non-literal meanings is easier to make than it is to describe. Typical formulations of this distinction have been concerned with distinguishing between conventional and non-conventional meaning (Davies, 1995: 124), between truth-conditional and non-truth-conditional meaning (Gazdar, 1979: 2), and between context-independent and context-dependent

aspects of meaning (Katz, 1977: 14). Unfortunately, distinctions based on conventionality, truth conditions, and context-independence each divide up the landscape of meanings differently, and none does so in a way that conforms to pre-theoretical intuitions about literal and non-literal language.

Some, such as Bach (1999), remain undaunted by these concerns and steadfastly maintain the need for a literal–non-literal distinction. Others, however, have argued eloquently against a coherent notion of literal meaning, and suggest the futility of ever drawing such a distinction (Gibbs, 1994; Lakoff, 1986). Ariel (2002a,b) has observed that part of the difficulty in drawing the distinction is due to the fact that literal meaning is not a unitary notion. Rather, literal meaning can be defined by linguistic, psychological, or interactional criteria. The *coded meaning* of a sentence, for instance, is derived from instantiating conventional lexical meanings in the manner cued by its grammatical structure. A *salient meaning* is a meaning that is psychologically salient irrespective of contextual appropriateness. Giora (1997, 2003) has argued that some word meanings are accessed before their contextually appropriate counterparts, as when the meaning of "drop" as "a tiny amount" is initially more salient than its meaning as "act of falling" even in contexts where the "falling" meaning is eventually deemed more appropriate. A *privileged interactional interpretation* is the minimal sentence meaning the speaker is held accountable for asserting (Ariel, 2002b).

While we don't believe that the literal–non-literal distinction plays a critical role in linguistic theory, we do believe there are interesting differences in literal and non-literal meanings. In many examples, figurativity is uncontroversial and it is possible to point to distinct literal and non-literal meanings. Indeed, there is often a systematic relationship between the literal and non-literal meanings of a given utterance. We suggest below that the systematic character of this relationship is best seen in the way that literal meaning, defined here alternately as coded and salient meanings (following Ariel, 2002a), is used to guide the construction of blended spaces. Of course, given that meaning – even in seemingly straightforward examples – is radically underspecified by linguistic information (see, e.g., Fauconnier, 1997; Recanati, 1989), linguistic information will need to be supplemented by contextually driven inferences in cases of literal and non-literal meaning alike (cf. Carston, 1988).

1.2. Conceptual blending and mental space theory

Conceptual blending theory offers a general model of meaning construction in which a small set of partially compositional processes operate in analogy, metaphor, counterfactuals, and many other semantic and pragmatic phenomena (Coulson and Oakley, 2000; Fauconnier and Turner, 1998). In this theory, understanding meaning involves the construction of blended cognitive models that include some structure from multiple *input* models, as well as emergent structure that arises through the processes of blending. Discussed at length in Fauconnier and Turner (2002), blending theory describes a set of principles for combining dynamic cognitive models in a network of *mental spaces* (Fauconnier, 1994), or partitions of speakers' referential representations.

Mental spaces contain partial representations of the entities and relationships in any given scenario as perceived, imagined, remembered, or otherwise understood by a speaker.

Elements represent each of the discourse entities, and simple frames represent the relationships that exist between them. Because the same scenario can be construed in multiple ways, mental spaces are frequently used to partition incoming information about elements in speakers' referential representations.

For example, Brandt (2005) presents (1) as an example ripe for mental space analysis.

(1)   Lisa, qui est deprimee depuis plusiers mois, sourit sur la photo. [Lisa, who has been depressed for several months now, is smiling in the picture.]

In (1), presumably, the speaker intends to mark the contrast between the representation of Lisa's mood in the picture, and her current emotional state. Though she appears happy in the picture, Lisa is, in fact, depressed. In order to capture both aspects of Lisa's emotional state, mental space theory suggests that (1) prompts the listener to set up two mental spaces, one, a reality space, and one, a photograph space. The cognitive model that structures the photograph space captures information about the content of the photograph, while the cognitive model that structures the reality space captures current information about the real-life Lisa.

One virtue of mental space theory is that it explains how the addressee might encode information at the referential level by dividing it into concepts relevant to different aspects of the scenario of talk about Lisa and her picture. By partitioning the information, however, this method also creates a need to keep track of the relationships that exist between counterpart elements and relations represented in different mental spaces. Consequently, the notion of *mappings* between mental spaces is a central component of both mental space theory and the theory of conceptual blending. A *mapping*, or *mental space connection*, is the understanding that an object or element in one mental space corresponds to an object or element in another.

For example, in (1) the listener should understand that there is an identity mapping between the element that represents Lisa in the reality space and the counterpart element in the photograph space. Besides identity, such mappings can be based on a number of relationships such as similarity, analogy, role–value relationships, and other pragmatic functions. In (1), for example, there is an analogy mapping between the happiness of Lisa in the photograph space, and the sadness of Lisa in the reality space. Of course, the relationship between Lisa's emotions and those attributed to her counterpart in the picture differs somewhat from our intuitive notion of analogy (e.g., an atom is like a solar system). Formally, however, this mapping is considered an analogy mapping because the happiness in one space plays an analogous role in the conceptual structure as the sadness in the other in that each instantiates a value for the role (or, attribute) Emotional State. Once elements in mental spaces are linked by a mapping, the *access principle* allows speakers to refer to an element in one space by naming, describing, or referring to its counterpart in another space. The link between the photograph and the reality spaces thus allows us to refer to the real Lisa by describing her image in the photograph, as in (2).

(2)   The smiling girl here has been depressed for about six months.

Although Lisa has been accessed from the photograph space, the predicate in (2) is likely to be understood as applying to Lisa in the reality space, even in a scenario where the speaker is pointing to the photo.

The central insight of mental space theory was that radically different types of domains functioned similarly in the way they licensed the construction of mental spaces. For example, temporals, beliefs, images, and dramatic situations all prompt for the construction of mental spaces, and are all subject to the same principles of operation at the level of referential structure (Fauconnier, 1994). The access principle, for example, that allows speakers to refer to an element in one space by describing its counterpart in a linked mental space, operates similarly whether the linked spaces are a belief and a reality space, a past and a present space, or a picture and a reality space. Thus Fauconnier (1994) demonstrates that the semantic problem raised by *de dicto/de re* ambiguities is a far more general phenomenon than previously realized, and that it stems from fundamental properties of meaning construction in the operation of the access principle.

1.3. Conceptual blending theory

Conceptual blending theory is a development of mental space theory intended to account for cases such as (3) in which the content of two or more mental spaces is combined to yield novel inferences.

(3)   In France, the Lewinsky affair wouldn't have hurt Clinton.

The two domains at play in (3) are French politics and American politics, and the ultimate rhetorical goal is to highlight a disanalogy in the reaction of the French and the American electorate to the sexual dalliance of politicians. Moreover, Fauconnier (1997) suggests that examples like (3) prompt for the construction of a *blended space* that inherits partial structure from two or more different *input* spaces. The inputs in this example are a French politics space and an American politics space.

The scenario in the blended space involves a French Bill Clinton who has an affair with a Monica Lewinsky-like character that results in negligible political consequences (in France). The blended space includes some structure from the American politics space, in that a politician has an extra-marital affair with a young underling, and some structure from the French politics space, in that the French electorate is accustomed to philandering politicians. The disanalogy between the real Bill Clinton's story represented in the American politics input and the counterfactual French Bill Clinton represented in the blended space highlight the more general contrast between the American politics space and the (real) French politics space.

Conceptual blending processes proceed via the establishment and exploitation of mappings, the activation of background knowledge, and frequently involve the use of mental imagery and mental simulation. Blending processes are used to conceptualize actual things such as computer viruses, fictional things such as talking animals, and even impossible things such as a French Bill Clinton. Interestingly, even though cognitive models in blended spaces are occasionally bizarre, the inferences generated inside them are often useful and lead to productive changes in the conceptualizer's knowledge base and

inferencing capacity. For example, entertaining the notion of a French Bill Clinton may change how one thinks about French and American politics (see, e.g., Turner, 2001: 70–77).

Although conceptual blending theory was motivated by creative examples that demand the construction of hybrid cognitive models, the processes that underlie these phenomena are actually widely utilized in all sorts of cognitive and linguistic phenomena (see Coulson, 2001 for review). At its most abstract level, conceptual blending involves the projection of partial structure from two or more input spaces and the integration of this information in a third, blended, space. When the information in each of the input spaces is very different from one another, this integration can produce extremely novel results. However, there are many cases that involve the projection of partial structure and the integration of this information that yield predictable results (e.g., integrating ''blue'' and ''cup'' to yield ''blue cup''). While many theorists object to calling the latter ''blends'' (e.g., Gibbs, 2000), Fauconnier and Turner (2002) have argued that it is useful to appreciate the continuity between creative blends and more conventional instances of information integration.

Moreover, Brandt and Brandt (2002) and Brandt (2005) have been critical of conceptual blending theory for its failure to specify the interpretive process for generating emergent inferences. Brandt and Brandt (2002) in turn propose a network of six mental spaces designed to derive the critical meaning of any given utterance. These spaces include a semiotic space, a presentation space, a reference space, a relevance space, a virtual space, and a meaning space (see Brandt and Brandt, 2002 for details). While their proposal is not completely compatible with blending theory as expounded by Fauconnier and Turner (2002), certain aspects of this six space mode of analysis are a useful addition to conceptual blending theory, especially as it pertains to the interpretation of figurative language in context.

Brandt and Brandt (2002) demonstrate their six space model through an extended analysis of the Surgeon is Butcher blend discussed in Oakley (1998) and Grady et al. (1999). In contrast to these earlier analyses, Brandt and Brandt discuss a situation where a patient, just after an operation, calls her surgeon a butcher after noticing a larger than anticipated scar. They observe that the use of the Surgeon is Butcher blend in this context does not evoke the emergent inference that the surgeon is particularly incompetent, as Grady et al. (1999) less contextualized analysis of the same phrase suggests. Instead, the blend is used to question the ethical conduct of a particular surgeon. Besides structure from the two input spaces, the meaning of this example emerges from local context which activates an ethical (as opposed to purely technical) schema for evaluating acts as helpful or harmful (Brandt and Brandt, 2002: 68).

We get a harmful reading not because butchers are inherently harmful, nor merely because our most psychologically salient conceptualizations of surgery and butchery entail very different competencies (cf. Grady et al., 1999). The derived meaning results because the blend presents a clash of competencies, and, perhaps more importantly, because the conceptual integration network has to accommodate the viewpoint of the speaker. From her perspective, the surgeon is a butcher because he apparently had as much regard for her body as a butcher would have for a dead animal. Though technically competent (i.e., he fixed the problem), the surgeon is construed as ethically incompetent for having so little regard for the effect of the surgery's resultant scar.

1.4. Grounding and conceptual blending

The coded meaning model of blending we use has a Presentation space, a Reference space, and a Blended space. The term Blended space derives from Fauconnier and Turner (2002), while the terms Reference and Presentation spaces are inspired by Brandt and Brandt (2002). Thus conceptual blending involves at least two input spaces in which one, the *presentation* space, elicits a mental scenario that functions to evoke the other *reference* space. The presentation space is akin to the notion of source domain in conceptual metaphor theory, and as Brandt (2002) specifies, often serves as an ''immediate object of wonder'' (2002: 53), especially in language judged figurative. The reference space represents a facet of the situation that is the present focus of attention of the discourse participants. Essentially, this nomenclature is intended to capture the fact that language users consider some inputs to the blend to be more important than others in terms of their consequences for the on-going activity.

One ready-made device for modeling local contextual aspects of meaning construction comes from Langacker's notion of *ground*.[1] Langacker (2002) uses the term ground to refer to the speech event, its participants, and the surrounding context. Further, he notes that the ground figures in the meaning of every expression because ''speaker and hearer are likely to be at least dimly aware of their role in entertaining and construing the conception evoked'' (Langacker, 2002: 318). In his discussion of cognitive grammar and discourse, Langacker introduces a slightly expanded notion of ground he calls the Current Discourse Space (CDS) that he thinks constitutes a mental space. For Langacker the CDS is ''the mental space comprising those elements and relations construed as being shared by the speaker and hearer as a basis for communication at a given moment in the flow of discourse'' (2001: 144).

Brandt and Brandt (2002) employ a similar construct which they dub the semiotic space, arguing that it is an obligatory rather than an optional element of the blending model. For Brandt and Brandt, mental representations of the on-going discourse, and the presumption that the speakers' and hearers' mental grounding is sufficiently aligned (though never identical) are fundamental prerequisites for meaning construction to occur. Thus the semiotic space that emulates the immediate situation can account for some very basic factors (some would say ''pragmatic banalities'') that guide meaning construction, and greatly influence the content of each mental space developed thereafter (Brandt and Brandt, 2002).

A number of aspects of local context are important in mental space theory. First, the ground might involve the conceptualizer's mental models of the on-going activity as represented in a semiotic or a current discourse space. It might also include mental models made accessible through symbolic or gestural deixis, as well as the ''background cognition'' that allows the conceptualizer to set up mental spaces, structure them, and

---

[1] This term ''grounding'' appears elsewhere in the functional linguistics tradition, most conspicuously in Givon (1990) and Hopper (1979). Givon restricts the notion of grounding to the speaker's assessment of ''old'' versus ''new'' information in discourse, while Hopper widens it to constitute a basic feature of all discursive activity, not just information structure. In our view, Hopper's wider sense of grounding is closer to Langacker's than is Givon's restricted sense.

establish mappings between them. As noted above, all sentences rely importantly on contextual assumptions that vary in their transparency to speakers and hearers. Indeed, some philosophers have argued that background assumptions are indefinite, and can vary greatly from one sentence to another, ranging from explicit assumptions to tacit knowledge to cultural skills and biological abilities (e.g., Searle, 1991).

In order to discuss the role of implicit and explicit assumptions in meaning construction, we include a grounding box in our diagrams of conceptual integration networks. The grounding box is not a mental space, and indeed may not even be representational in the way that other spaces in the integration network are presumed to be. The grounding box contains the analyst's list of important contextual assumptions – assumptions that need not be explicitly represented by speakers, though they influence the way that meaning construction proceeds. When those assumptions are explicitly represented by speakers they are represented as models in mental spaces in the integration network. In order to model the way that contextual assumptions and concerns affect meaning construction, the grounding box can be used to specify roles, values, and experiences that ground speakers' subsequent representations.

For our purposes, we posit two distinct variants of ground: *deictic* and *displaced*. The deictic ground refers to the specific regulative conditions of real usage events. In addition to the time and the place of linguistic utterances, the grounding box can include the relative status of the participants: a father talking to his son, a teacher talking to a student, a doctor to a patient, etc. Also included in this box is the forum: a father talking to his son in a museum, teacher–student conference in the teacher's office, a doctor–patient consultation in an examination room, and so on. These different situations define and constrain meaning and interpretation (cf. Goffman, 1974).

Following Bühler's ([1934] 1990: 137–177) discussion of imagination-oriented deixis, we propose that a 'displaced' grounding box often assumes a critical role in setting up mental spaces. In this formulation, a set of deictic coordinates – *I*, *you*, *he*, *she*, *it*, *they*, *this*, *that*, *here*, *there*, *these*, *those*, *now*, *then*, *yesterday* – can be invoked to refer to objects and states-of-affairs available only from memory or fantasy.[2] As in Fillmore's theory of frame semantics where certain verbs automatically imply particular roles, values, and perspectives taken by one or more of the discourse participants, different communicative contexts activate structured background knowledge that constitutes and constrains the interpretive process. For example, the accountant who places the icon for ''scrutinizing a business'' on her door invokes a particular semantic frame that communicates the activity and the attitude and perspective she will take toward her object.

---

[2] Bühler specifies three kinds of imaginary deixis: projecting an ''I'' and other relevant discourse elements into a distal spatiotemporal scene, projecting elements from a distal spatiotemporal scene to the current grounding space, and projecting elements of a distal spatiotemporal scene into the current grounding space so that the addressee can interact with them directly. For example, in (3), the universal pronoun, ''no-one'', exhibits the first kind of projection if we assume it refers to all sentient beings living in France (including the speaker) even though the speech event occurs in the United States. In (1) and (2), the temporal adverb ''now'' projects the real but absent Lisa into discursive present. In example (14) discussed later, the writer addresses the reader as ''Dear Co-worker,'' and admonishes him or her with ''you needn't be vicious or hurtful''. In so doing, the writer builds a fantasy world of office gossip immediately accessible to both discourse participants.

Consider (3), diagrammed in Fig. 1. Suppose for the sake of exposition that this utterance appeared in an editorial column on French politics published in *The Washington Times*, one of the most conservative daily newspapers in US America. According to our model, the grounding box specifies the participants: a conservative columnist and editor(s) as the writers and, presumably, readers of similar ideological stripe. It also specifies the specific forum: a daily newspaper circulated in and around Washington, DC, and the newspaper of choice by George W. Bush's staff. Finally, the circumstances of the discourse: let us stipulate that this column is discussing French politics in the wake of France's blockage of the vote by the United Nation's Security Council authorizing war with Iraq. Thus we use the grounding box as a post hoc analytic device for specifying three basic elements of all discourse.

The derived meaning of the utterance develops out of the contextual information described in the grounding box and the mental spaces in the network. The mere mention of the Clinton affair activates a mental space for US American politics in which there was an impeachment and a Senate trial. This space functions as a presentation space, as it presents the reader with an immediate scenario used as an organizing frame for referencing French politics. The adverbial phrase, ''in France'' is the linguistically coded space builder for the content of the reference space. While the grounding box specifies the general thrust of what the column is about, the reference space allocates attention to the specific focus within this broader topic: French voters care little about their leaders' extra-marital affairs. As outlined above, the blend recruits the events (but not the consequences) from the presentation space and integrates it with the political ecology represented in the reference space. This integration produces a counterfactual scenario of a French Clinton having an extra-marital affair, with no unwanted political consequences.

The fully derived meaning of this utterance, however, involves more than the information represented in the conceptual integration network. The utterance meaning depends on the very strong negative emotional valences that the writer and likely readers presumably associate with Clinton and the French (based on the stereotype of the demographic targeted by this conservative publication). Hence the emergent meaning stipulated above, feeds back from the blend to the grounding box. The fully derived meaning of this utterance is that it exemplifies the venal nature of French politics by illustrating how a reviled political figure like Clinton would thrive. The new, updated ground from which subsequent meaning making takes place might focus on the lack of moral clarity in French politics and their unwillingness to confront evil.

The importance of local contextual information (which, in the model, is captured by the grounding box) can be seen by imagining the appearance of (3), as diagrammed in Fig. 1a, in an article published under similar circumstances by *The Nation*, one of the most progressive publications in the United States. Due to its grounding in disenchantment with the sensitivities of the American populace, the American politics space serves as the reference space, and the French politics space serves as the presentation space. In contrast to the *Washington Times* occurrence of this utterance, here the French are more likely to be construed as heroes than villains, their populace is rational, and their political system representative of European politics in general. In the leftist counterfactual, the revered Monsieur Clinton is not unjustly punished and nor is his attention diverted from more pressing matters, such as the then growing threat of global terrorism.
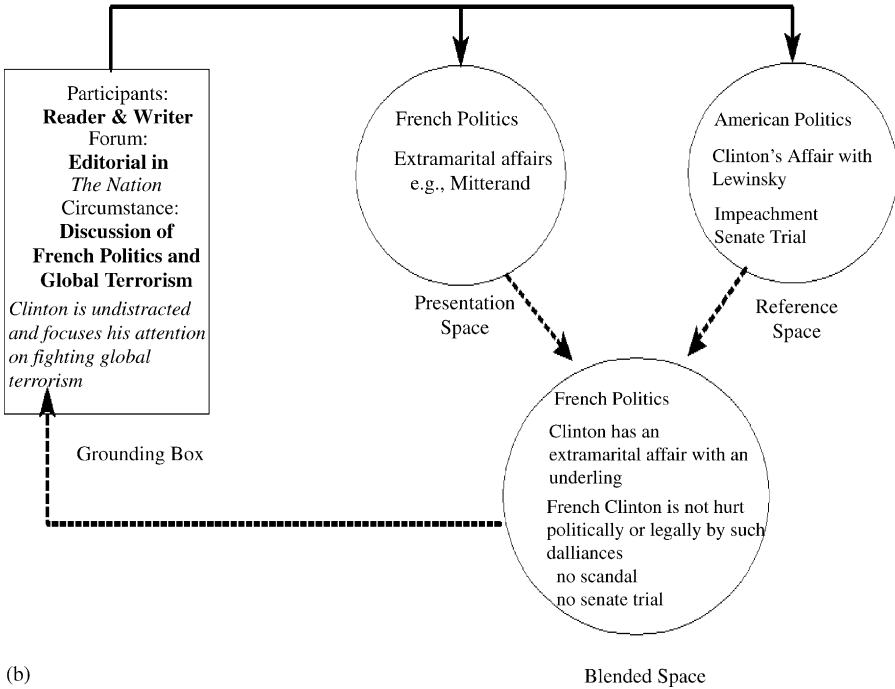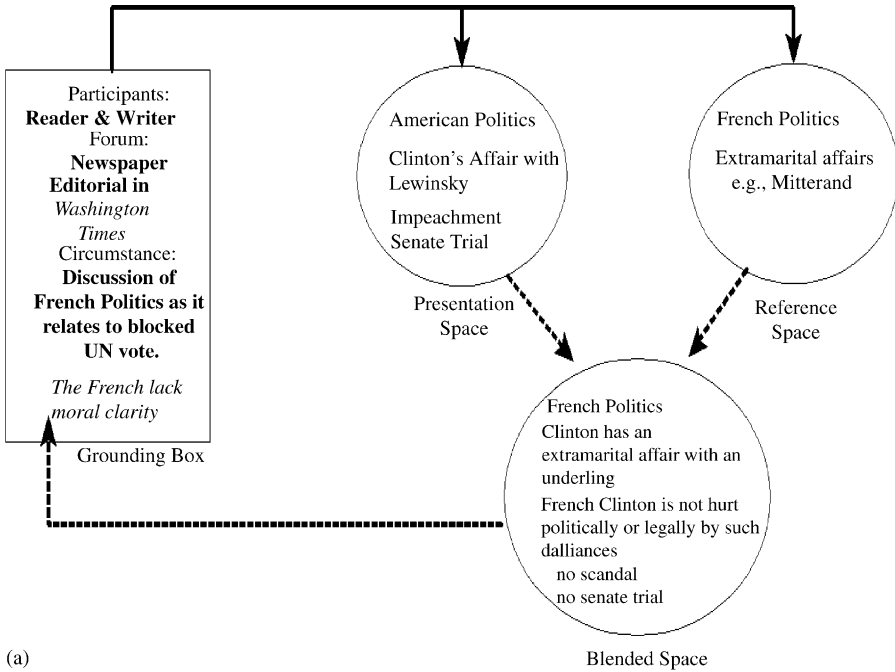
Participants:
Reader & Writer
Forum:
**Newspaper
Editorial in**
*Washington
Times*
Circumstance:
**Discussion of
French Politics as it
relates to blocked
UN vote.**

*The French lack
moral clarity*

Grounding Box

American Politics

Clinton's Affair with
Lewinsky

Impeachment
Senate Trial

Presentation
Space

French Politics

Extramarital affairs
e.g., Mitterand

Reference
Space

French Politics

Clinton has an
extramarital affair with an
underling
French Clinton is not hurt
politically or legally by such
dalliances
  no scandal
no senate trial

(a)   Blended Space

Participants:
Reader & Writer
Forum:
Editorial in
The Nation
Circumstance:
**Discussion of
French Politics and
Global Terrorism**
*Clinton is undistracted
and focuses his attention
on fighting global
terrorism*

Grounding Box

French Politics

Extramarital affairs
e.g., Mitterand

Presentation
Space

American Politics

Clinton's Affair with
Lewinsky

Impeachment
Senate Trial

Reference
Space

French Politics

Clinton has an
extramarital affair with an
underling
French Clinton is not hurt
politically or legally by such
dalliances
  no scandal
no senate trial

(b)   Blended Space

Fig. 1. (a) French Clinton and moral clarity. (b) French Clinton and global terrorism.

2. Metaphor

Probably the number one reason cited for the untenability of the literal–non-literal distinction is the prevalence of metaphoric language. In an influential account of metaphor, Lakoff and Johnson (1980) suggested that metaphoric language is a manifestation of conceptual structure organized by a systematic set of correspondences between two domains that results when cognitive models from a source (or vehicle) domain are mapped onto a target domain. Motivated by data like that in (4)–(11), Lakoff and Johnson (1980: 4) argued that far from being a literary curiosity, metaphor is a pervasive and systematic aspect of everyday language.

(4)   Your claims are indefensible.

(5)   He attacked every weak point in my argument.

(6)   His criticisms were right on target.

(7)   I demolished his argument.

(8)   I've never won an argument with him.

(9)   You disagree? Okay, shoot!

(10)   If you use that strategy, he'll wipe you out.

(11)   He shot down all of my arguments.

This metaphor, known as the ARGUMENT IS WAR metaphor, results because verbal argument is being conceptualized in terms of war. In both sorts of conflict, we employ strategies and attack positions. In both sorts of conflict, we can talk about winning. What's more, the shared terminology in these two domains seems to reflect shared inferential structure (see Lakoff, 1993 for review). For example, a position in a battle corresponds to a position in an argument, and the spatial configuration of participants in a physical battle maps onto the ideological configuration of participants in a debate. Hence, occupying the same position metaphorically implies agreement and occupying different positions implies disagreement. Thus metaphoric language is the linguistic manifestation of shared conceptual models in two domains.

One of the original insights of Lakoff and Johnson (1980) was that the implications of metaphorical statements are often analogical extensions of their literal implications. In combat, if your missile is "right on target" it results in the destruction of one of your opponent's military assets. In verbal argumentation, if your criticism is "right on target" it results in the refutation (or "destruction") of one of your opponent's arguments (or argumentative assets). In fact, one technique for uncovering conceptual metaphors involves scrutinizing language with what might be dubbed an "overly literal" eye in order to notice the way that terms and concepts from concrete source domains are often used analogously in discussions of more abstract target domains.

Fauconnier and Turner (2000) note that while metaphoric language invokes terminology from both the source and the target domains, the metaphor itself describes neither. For

example, commenting on Lakoff and Kövecses' (1987) analysis of anger metaphors in English, Fauconnier and Turner observe that (12) invokes terminology both from the domain of heated containers (''smoke'') and from the domain of anger (''mad'').

(12)   He was so mad I could see the smoke coming out of his ears.

However, the phrase ''smoke coming out of his ears'' pertains neither to the domain of heated containers, nor to the domain of angry people. Drawing on the same sort of ''overly literal'' analysis that often proves useful in the identification of conceptual metaphors, Fauconnier and Turner suggest that meaning construction for this phrase involves the construction of an intermediate cognitive model (the blend) with selected aspects of both domains.

Thus (12) prompts the construction of a conceptual integration network with one input structured by the source domain of heated containers (as outlined in the Lakoff and Kövecses, 1987 analysis), one input structured by the target domain of anger, and a blended space in which an angry person has smoke coming out of his ears. The presentation space offers the topological structure of building and releasing pressure as a means of understanding the topic of the reference space: human anger. In the blend, anger is indexed by some sign of released pressure. The observer construes the visual cues of anger in the reference space in terms of topology from the presentation space.

Moreover, the communicated meaning develops under pressure from factors outlined in the grounding box. The ground adds a crucial component about the speech event, namely that the speaker witnessed an event that the listener did not. For example, the speaker may have witnessed the subject's reddened face, grimaced expressions, profuse sweating, and wild gesticulation and recognizes in them signs associated with heat and pressure that underlie the conceptual mappings for basic metaphors of anger. The coded meaning of (12), then, can be seen as guiding the construction of the blended space in a fairly direct manner. However, in order to understand the intended figurative meaning of (12), it is necessary to apply both background and contextual knowledge to identify target domain counterparts of elements and relations in the blended space.

2.1. Entrenched metaphor

As noted above, one reason frequently given as to why a clear-cut distinction between literal and non-literal language is nearly impossible to make is the pervasive presence of entrenched metaphors. In conceptual metaphors such as ARGUMENT IS WAR, discussed above, or TIME IS SPACE (as in ''That took a *long* time,'') the shared vocabulary and inferential structure between the two domains is so conventional as to pass unnoticed. Such examples are metaphorical in that they are the manifestation of a cross-domain mapping, but literal in that the ''metaphorical'' meaning of the term has been lexicalized and can be retrieved without (necessarily) noting the analogical mapping that originally motivated it.

(13)   On the one hand, X; on the other hand Y.

Similarly, (13) is an excellent example of an entrenched metaphor, a phrase whose primary meaning is the figurative meaning in which the speaker highlights a contrast between two ideological positions. Interestingly, it is also an expression whose use is accompanied by a stereotypical gesture sequence in which the speaker presents the listener with the upturned palm of her left hand during the utterance of ''On the one hand,'' and presents the listener with the upturned palm of her right hand during the utterance of ''On the other hand. . ..'' Indeed, subsequent reference to a given idea in question can be made by gesturing towards the particular region of space initially associated with that idea. In this idiom, two propositions map onto the bilateral symmetry of the body so that in the blend one of the speaker's hands (say, the left) indexes the first proposition, while the other hand indexes the second proposition. The body thus becomes the context for articulating the incompatibility of the two propositions by presenting them in adjacent positions in time and space.

Unlike many metaphors, the logic of this idiom does not derive from the source domain (represented here in the presentation space), but reflects the target domain logic as represented by structure in the reference space. That is, two objects are not necessarily incommensurate in virtue of their association with two different sides of the body. The inference of incommensurability derives from the target domain (reference space), and is animated somewhat hyperbolically in the blended space. In the blend, the ideas are invisible objects that exist in space in the speaker's hands, and that sometimes have weight. Because the same blended cognitive model can be interpreted differently when it pertains to different situations, the content of the reference space plays an important role in the interpretation of a blend. Moreover, marking one of the input spaces as the reference space serves to formalize its status as the rhetorical topic.

We suggest that in metaphoric examples such as (13), the linguistic content of the sentence provides the listener with the information needed to structure the blended space. But, while the coded meaning plays a pivotal role in the structuring of the blended space, its role in *interpreting* (13) is relatively minor. Comprehension of the idiom in (13) involves unpacking the blend to the presentation and the reference input spaces – a process that requires the application of a substantial amount of background knowledge, including extensive use of conceptual metaphors. That is, the meaning of the idiom and accompanying gestures derives mainly from the mappings between the elements and relations in the blended space and their counterparts in the reference space. For example, relative spatial proximity of ideas in the blend corresponds to their similarity in the reference space, a mapping that relies on the primary metaphor SIMILARITY IS PROXIMITY (Grady, 1997). The relative height of ideas in the blend corresponds to their relative goodness in the reference space, a mapping that relies on the metaphor GOOD IS UP. The relative weight of ideas in the blend corresponds to their relative importance in the reference space, a mapping that relies on the metaphor IMPORTANCE IS WEIGHT.

Of course, a de-contextualized analysis of the meaning of a metaphor is bound to leave something wanting. As Fauconnier (1997) notes, language expressions do not have meaning in and of themselves, but rather meaning potential. The meaning that an expression can produce in a particular communicative situation depends radically on the background knowledge of the participants, as well as the extant mental space configuration set up in the local context. Brandt and Brandt (2002: 69) write, ''When forming

generalizations about meaning construction we should look at what people do say and not what we, sitting at our desk, can imagine them saying.''

Consider a particular instantiation of the idiom, ''On the one hand. . .on the other hand'', in *Haaretz* in an article about the possibility of a closer relationship between Israel and the European Union (January 26, 2004 [emphasis ours]):

> ''I noticed people saying, which they didn't use to say, but now they have been saying for the last year or so, perhaps Israel should have never been invented, but then I hear them say that the only solution is for the Arabs to accept the existence of Israel, and normalize with it'', she says. ''So I see them *on the one hand* acknowledging that the Arabs have reason to resent the Europeans for supporting something they find intrusive, but *on the other hand* demanding the Arabs to put up with it, now that it has happened. And so it would be more consistent for the Europeans, and the British included, to say: Yes, we did want Israel to exist, and it is not a mistake, but since Israel is more us than you, Israel's future will be more with us than with you, the Arabs.''

Let us assume that the participants who are arguing are using their bodies as modes of presentation to refer to ideas and positions. Such circumstances, for which all participants would be at least dimly aware, enables the idiom. The phrase, ''on the one hand'', prompts discourse participants to activate a blended space in which hands and the bilateral symmetry of the human body function as a symbolic means of representing conflicting ideas about the relationship between Arabs and Israelis. One reference space represents the legitimacy of Arab resentment of the state of Israel, while another represents the demand that Arabs accept the existence of the state of Israel. In the blend, each hand of the human body actually contains and supports a particular ideological position, as shown in Fig. 2.

In Langacker's terms, the speaker's body becomes part of the ''scope of predication,'' insofar as the human body functions as the ground encompassing both the presenter and its referents. In other words, the meaning of the phrase itself implicitly invokes the presence of a speaker's body as a spatial orienting device for locating the two positions. By bringing the two attitudes together as graspable objects in space, the speaker invites the listener to consider their compatibility, and thereby highlights an inconsistency that might go unnoticed if the two positions were considered separately.

This is not to suggest, however, that the writers or the readers of this passage are aware of the blending of bodies and argumentative positions. Indeed, the entrenched nature of the metaphor argues to the contrary. The symbolic means of construing incommensurable positions has been subjectified to the point that the speaker is no longer aware of its existence. However, as many have argued before, speakers' awareness of the metaphoric properties of an expression is not a necessary component of its metaphoricity (see, e.g., Lakoff and Johnson, 1980; Turner, 1997; Fauconnier, 1997 to name but a few).

2.2. Cream in my coffee

Fauconnier (1997) argues that this intuition – that some metaphors are more figurative than others – is an artifact that results because some metaphoric meanings are more frequent than others, and consequently, the underlying cross-domain mappings become
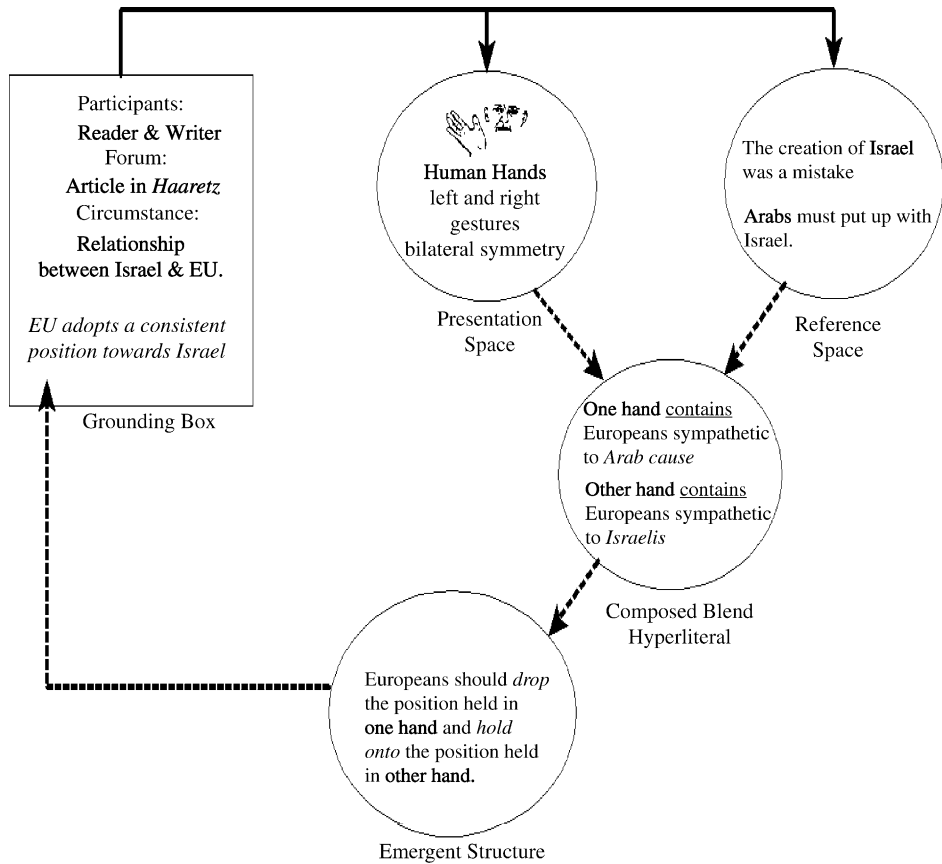
Fig. 2. On the one hand/other hand.

opaque to speakers. He writes, "There is, however, no formal difference between the lexically entrenched (opaque) cases and the ones that are perceived as innovative. Many of the latter are in fact simple extensions of the former" (Fauconnier, 1997: 8). Similarly, Turner (1997) suggests that identical processes are at play in the comprehension of entrenched and novel metaphors, but that some examples simply "feel" more figurative.

We suggest that apparent processing differences between conventional and novel metaphors reflect the way in which mappings between the blend and the inputs are established, and the way that emergent structure arises. In their study of the "career of metaphor", Wolff and Gentner (2000) have argued that novel metaphors invoke the cognitive process of alignment, important in analogical reasoning, while more conventional metaphors rely on retrieval of an abstract commonality. Similarly, we suggest that the mappings in conventional metaphors are established via an automatic process of retrieval, while mappings in novel metaphors require analogical reasoning processes. Further, we propose that in the entrenched metaphors the "emergent" structure is retrieved, while in novel metaphor it must be actively computed or derived.
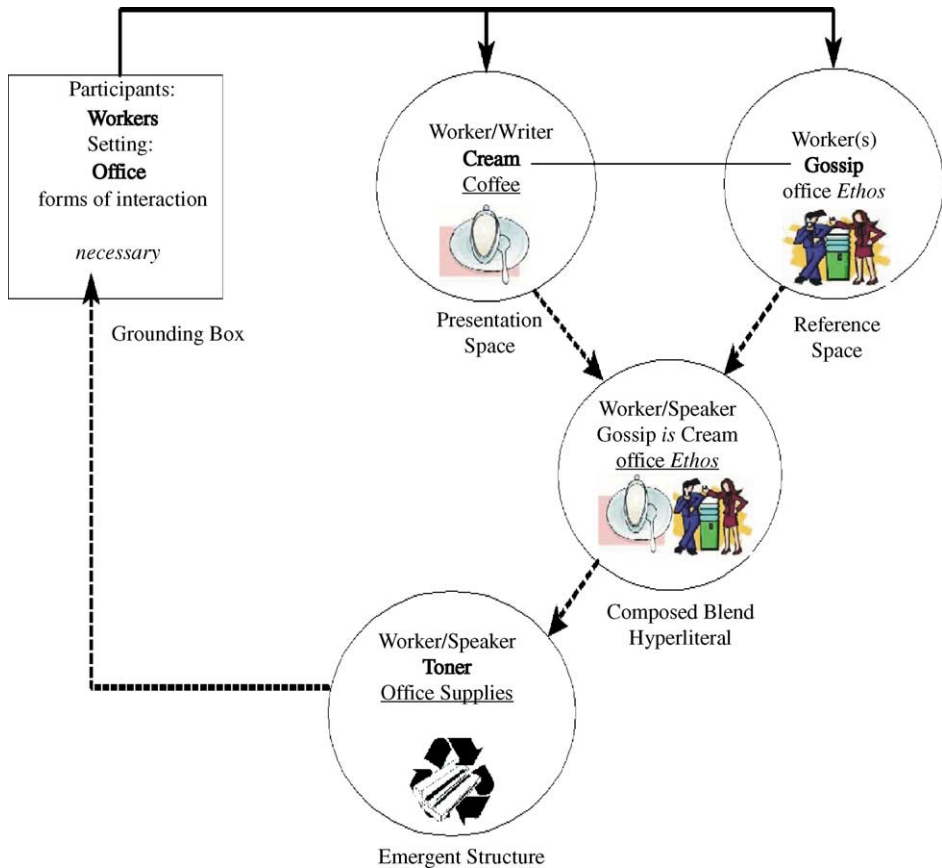
Fig. 3. Cream in my coffee.

The underlying commonality between entrenched and novel metaphoric blends can be seen in (14), diagrammed in Fig. 3, that presents an entrenched and a novel metaphoric blend in the same sentence.

(14)   I'm all for gossip. It's the cream in my coffee, the toner in my Xerox machine.

(14) appeared in a column in the business section of the *Denver Rocky Mountain News*, under the title "Quality Gossip Means Following Some Easy Rules". The grounding box for this example would include the roles "Columnist" and "newspaper reader", the Sunday edition of the Rocky Mountain News and the structure of expectations constraining the discourse at that moment. Depending on the object of analysis, the immediate grounding varies in relevance. Indeed, when one is immersed in reading, the immediate grounding is irrelevant as the reader imagines himself in the office frame. Nonetheless, the ground becomes highly relevant when the reading is interrupted, as when a family member

asks you what you are doing, and you respond with "reading a silly column about gossip in the Business section of the newspaper."

In many cases, then, it is necessary to invoke a displaced grounding box. For example, the phrase in (14) occurs eight sentences into the text that begins with the writer addressing the reader as both "you" and "Dear Co-worker". We suggest the salutation "Dear Co-worker" helps establish a displaced grounding box (depicted as a square in Fig. 3) in which writer and reader are office workers from the same workspace. The construction and activation of this information permits several possible representations of a situation through its various deictic and anaphoric assignments, e.g., *I*, *you*, *co-worker*, and raises the salience of background knowledge about office life. With the phrase, "I'm all for gossip", the writer builds a new mental space relative to the grounding box (depicted with solid arrows in Fig. 3), the reference space, in which she positively evaluates gossip.

The very next phrase, "It's the cream in my coffee", likewise builds a corresponding presentation space, in which one facet of office life, drinking coffee, functions as a source domain for understanding the scenario in the reference space (gossip in office life). The conveyed meaning of (14) is, of course, that gossip plays a role in office life which is analogous to that of cream in coffee: adding cream/gossip to X results in making X better. However, this idea is linguistically conveyed by suggesting that gossip is cream, a condiment that one might add to coffee. Thus, in the blended space, gossip is added to coffee in order to make it more palatable.

The writer immediately follows the cream in my coffee remark with a similar construction that uses another aspect of office life to evoke a presentation space: "[it's] the toner in my Xerox machine." Importantly, the same grammatical structure (X in my Y) marks the same topology of something added to something else. However, in this case, the additive is not optional (as cream is to coffee), but rather is a necessary component. One does not need to add cream to coffee to drink it, but one has to add toner to a photocopier to make copies. In the blend, then, gossip is added to the photocopier to make copies, and the inferential consequence in the reference space is that gossip is a necessary component of a functional office.

In the conventional blend, the reader knows to map cream onto the subject term (here gossip as the referent of "it"), and coffee onto the term from the reference space office life. Moreover, she can simply retrieve the inference that gossip makes office life better. In the novel blend, the reader knows to map toner onto the subject term (again gossip as the referent of "it"), and Xerox machine onto the unspoken term from the reference space office life. However, the inference about the fundamental role that gossip plays in office life is not retrieved, but computed. Thus the effect of entrenchment is not confined to retrieval of the cross-domain mappings, but also pertains to the inferences that were initially generated in the blended space.

2.3. Novel metaphor: zoo parents

We have seen that conceptual metaphor theory undermines the distinction between literal and non-literal language because it defines metaphoric language as including any linguistic unit whose meaning can be seen to participate in cross-domain mappings (such as that between argument and war). Both "shooting down an argument" and "winning an

argument'' are considered to be metaphoric on this view because both reflect underlying connections between English speakers' concepts of the domains argument and war. This is true in spite of the fact that, intuitively, ''shooting down an argument'' seems to require analogical projections from the domain of war to the domain of argument, while ''winning an argument'' does not.

We explore this issue below by analyzing a novel metaphoric concept that has recently arisen in Cleveland, Ohio: *zoo parent*. Following Fauconnier (1997) and Turner (1997), we suggest that novel and conventional metaphors are alike in a number of ways. For example, the interpretation of both novel and conventional metaphors involves the activation of a presentation space. Both novel and conventional metaphors frequently employ the same mapping schemas (see, e.g., Lakoff and Turner, 1990). Moreover, both novel and conventional metaphors frequently require the activation of a blend of structure from the presentation and reference inputs.

The text in question appears on the Cleveland Metroparks Zoo website and as a program brochure distributed at the zoo via information booths. It asks patrons to ''adopt an animal'' and to become ''zoo parents''. This concept involves a blend of cognitive models from two inputs, the presentation space of Adoption and the reference space of Zoo Collection. In the Adoption space we have two roles: child (or children) and parent or parents. In this space, adults assume legal and financial responsibility for a child who is not biologically related to them. In this space, the child becomes their son or daughter and lives with them in the same household. The parent is legally responsible for the child and is subject to certain legal and financial penalties if the child misbehaves.

In the Zoo Collection space, a zookeeper cares for a member or set of members in the collection of animals. Care for the animal includes feeding, housing, and cleaning it, as well as providing medical attention for the animal. In sum, the zookeeper is responsible for keeping the animal safe and healthy. In this space, a patron pays admission fees and membership fees that help keep the park open and running. In addition, patrons can take part in special programs in which they make donations of $35 or more that go to cover costs of feeding and caring for specific members of the collection.

In the blend, the zoo patron becomes a ''Zoo Parent'' and an animal in the collection becomes a ''Child''. The patron donates money used to care for a specific animal in the zoo. This act is construed metaphorically as an act of adoption. The patron picks from a list of animals and donates $35 or more to the care of that animal. In the Zoo Collection space, this transaction would be construed as a donation. In the blend, however, it is construed as an act of adoption. Further, if rhetorically effective, the blend recruits the emotional associations of adopting a child from the Adoption space. Although zoo parents do not function as typical parents, their behavior affects the lives of these animals. Further, the paternal and maternal emotional valences associated with adoption ''harmonizes'' with a larger set of affects associated with more generic organizing frame of care-giving that guides the development of conceptual structure in the reference space.

As in most blends, the projections from the presentation input are partial rather than exhaustive, and many of the consequences of becoming the adoptive parent of a child do not obtain for the zoo parent. For example, the animal does not live with the zoo parent and the zoo parent has no legal responsibility to keep the animal safe and healthy. Further, unlike the process of becoming the adoptive parent of a child, there are no qualifications for

becoming a zoo parent. In fact, zoo parents can adopt as many animals as they can afford. Moreover, while the adoption of a child is permanent, the zoo parent's adoption only lasts for a year. The partial nature of the projections from the Adoption space contributes to the intuition that this blend is figurative, as does the presence of emergent structure in the blended Zoo Parent space.

The integration of projections from these two disparate frames results in a concept of an adult who is simultaneously a patron and a parent, and an animal who is simultaneously an object on display and a child. Once established, this metaphoric blend can be rhetorically powerful for both producers and consumers of the zoo website because it creates the possibility of exploiting other terms and concepts from the domain of Adoption (and parenthood) so as to apply in the reference space of Zoo Collection. For instance, adoptive parents receive mention on the ''proud parents honor roll'' such that they are honored for being parents. Whereas parents take pride in the accomplishments of their children, zoo parents take pride in supporting the zoo's mission and being good stewards of the environment.

The emergent notion of adoption in the Zoo Parent blend differs notably from its counterpart in the Adoption space. For example, in the Adoption space, the parent and child live together in the same house (as do the pets in instances of ''adopt a pet''), but the zoo parent has virtually no physical contact with the adoptee. The zoo parent has no privileged status over other patrons *vis-à-vis* contact with animals. The parent is not allowed to touch, handle, or feed the animal, even at the maximum donation rate of $1000. Increased contact becomes manifest only through increased contact with the animal's zookeeper (perhaps the counterpart of a ''nanny'' in the Adoption space). In fact, multiple families can adopt the same animal.

Despite these mismatches, the adopt-an-animal scenario, however fanciful, seems a success. Since its inception, the program boasted well-over 500 new zoo parents in the months of December 2001 and 2002 (Proud Parents 2003). People do not seem to mind the mismatches, and they don't seem to demand custody of the animals. Why? Whether browsing the web or wandering around the zoo (situations in which zoo patrons can learn about the adopt-an-animal program), knowledgeable patrons employ a Care-Giving frame that can be instantiated flexibly. In short, animals in the collection fall in the general category (along with children and pets) of beings that depend on adult human intervention for survival and health. The Zoo Care-Giving frame defines the institution, its mission, and many surrounding activities that have developed over time. The urgent need to care for these animals is further defined with respect to a context of conservation. The Adoption frame is portable and compatible with the Zoo Care-Giving frame, and thus can be integrated with situations defined by it.

As shown in Fig. 4, the use of the grounding box in our analysis is meant to highlight the fact that the special circumstances of Care-Giving are constantly reinforced in zoo practices and representational strategies. During zoo visits, patrons are physically partitioned from the animals, and repeatedly admonished not to feed the animals, and are even told that it is not safe for certain species of animals (e.g., *Borneo orangutans*) to breathe the same air as humans. Therefore, the notion of being an adoptive parent but having no physical contact with one's ''child'' seems plausible in a situation framed by the zoo grounding. In the blend, then, it is only possible to show love and affection by *not*
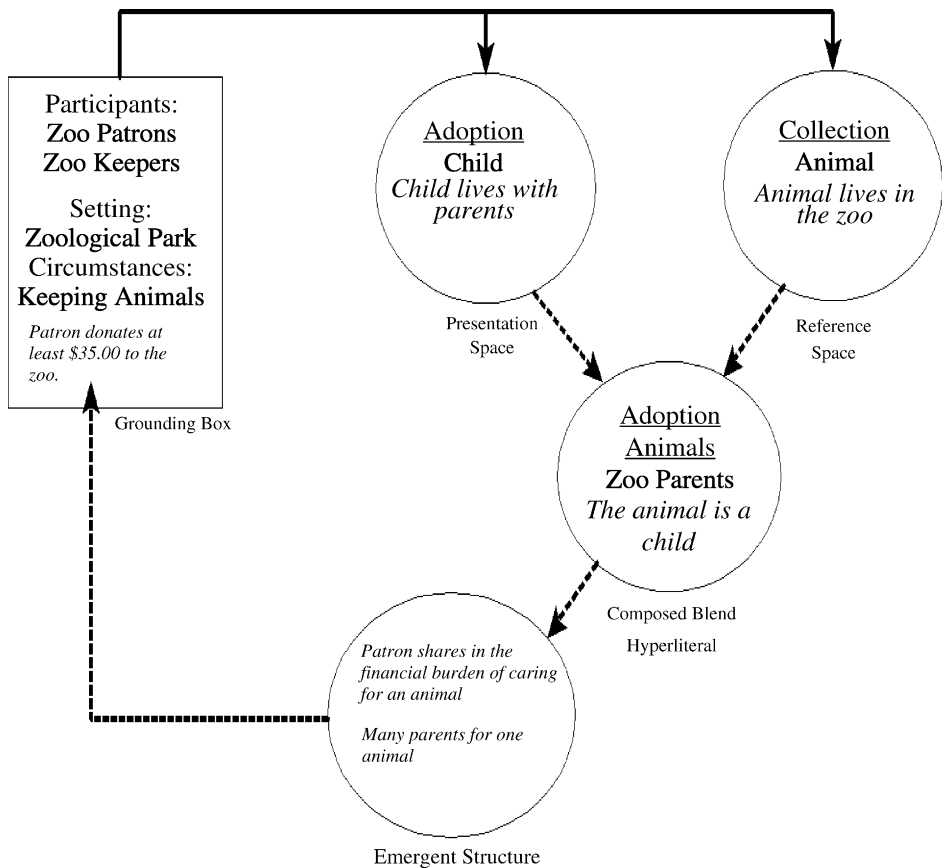
Fig. 4. Zoo parent.

making contact with the animal. If you really love your orangutan, you will not try to touch her, because doing so would endanger her.

When analyzing zoo discourse, one can use the grounding box to note the specific functional roles of the participants who are often not the object of explicit attention but who, at any moment, can become so. With this example, the functional role of *zoo patron* or (since the discourse being analyzed comes from a website) even *web browser* might be used to constrain meaning construction. In this case, the Care-Giving frame is a facet of the Zoo Collection space, and arises from visiting zoos and other institutions of display, internalizing the rules and modes of conduct therein, and reusing them. Our analysis suggests that the general meaning of adopt-an-animal relies on the figurative extension of the Adoption frame to cover instances that apply to adoption only in a peripheral sense, namely through the transfer of affect from the Adoption space to the zoo parent blend and subsequently to the zoo collection (reference) space, the space governing real world action (i.e., donation).

Moreover, the extension of the category of "Parent" in this example is a very social process. The definition of zoo parent is constrained not only by the conventional meaning

of the two input concepts, but also by the people in charge of the zoo. That is, the precise characterization of zoo parents does not in the end depend upon an objective consideration of the mappings between concepts of parenthood and zoos, but on the decision of a committee of people associated with the zoo. In this, as in all cases of concept combination, the meaning of the combined concept is not algorithmically determined, but rather constructed by participants in such a way as to meet contextual communicative and conceptual needs (Coulson, 2001).

Zoo parent is seen as a figurative expression because it requires the integration of roles from distinct organizing frames, and because analogical reasoning processes are needed to help establish the mappings between these roles. We have suggested that the establishment of mappings in the Zoo Parent blend rely on the applicability of a Care-Giving frame in both the domains of Zoological Societies and Parenthood. Moreover, the establishment of mappings is facilitated by the existence of other metaphorical uses of adoption such as "Adopt a Pet", "Adopt a Bird", "Adopt a Greyhound", "Adopt a Husky", "Adopt a Band", "Adopt a Highway", and even "Adopt a Minefield".

As noted above, such novel extensions of a category can become entrenched blends with repeated use and social institutionalization. When a social institution such as a zoological society officially sanctions a particular practice and labels in parenthood, it effectively changes the "literal" application of the term. The claim is that *zoo parent* evokes the same conceptual integration network regardless of whether it is novel or entrenched. The difference that comes with entrenchment is that the mappings between spaces in the network are retrieved from memory rather than being effortfully calculated. When *zoo parent* is a novel concept, we actively consider the parallels between the consequences of donation and the domain of parenthood. Once entrenched, we merely activate knowledge that the zoo parent's donation is used to help feed, house, and care for the adopted animal, just as a parent feeds, houses, and cares for her child. A further difference between novel and entrenched metaphoric blends is that in an entrenched blend the emergent structure is retrieved from memory, rather than arising from an on-line process of elaboration.

3. Fictive motion and virtual change

Another assumption important for making the literal–non-literal distinction is the idea that nouns, verbs, and other relational elements in literal language refer to actual individuals and actual relationships. In contrast, Langacker (1999) argues that much of so-called literal language involves reference to virtual rather than actual entities. The concept of *actual* here is defined relative to a world such that mythical objects are actual if they are grounded in the context of a mythical world. Langacker explains that Adam and Eve in (15) and (16) are both actual, in spite of being mythical characters.

(15)   Adam ate an apple.

(16)   Eve eventually exited Eden.

(17)   Serpents seldom seem sincere.

By contrast, the serpents in (17) are *virtual* because, as a generic sense, the term ''serpents'' is not grounded. Virtual entities involve the construction of a virtual plane (akin to a mental space) that is distinct from the actual plane.

One example of a linguistic phenomenon that involves reference to these virtual entities is fictive motion. In fictive motion, forms that conventionally refer to motion are applied to static elements (Talmy, 2000). For example, in (18), the motion predicate *runs* is applied to a static entity.

(18)   The blackboard runs all the way to the wall.

While one might be hesitant to classify fictive motion as metaphor (as intuitively, at least, we don't seem to understand stationary blackboards via a systematic set of inferences from the domain of moving blackboards), most native speakers would presumably agree that such examples are non-literal in that the blackboard in question doesn't actually move. We agree with the intuition that fictive motion constructions differ somewhat from metaphors, and below we suggest that the motion construal in these constructions is in fact important for conceptualizing spatial relationships such as that between the blackboard and the wall in (18).

Fauconnier (1997) notes that fictive motion constructions involve a blend between an abstract motion scenario and a static representation of the relationship between two or more objects referred to in the construction (see also Hutchins, 2005). In this case, we have a blend of a static construal of the spatial extent of the blackboard and an abstract, image schematic understanding of a trajector that moves relative to a reference point, or landmark. There is a mapping between the blackboard and the trajector and these two elements are fused in the blended space. There is also a mapping between the wall and the landmark, and these two elements are fused in the blended space. In the motion input, the trajector's motion ends at the landmark. Similarly, in the blended space, the motion of the blackboard/trajector ends at the wall/landmark. The path of motion can then be mapped onto the spatial input to be construed as the spatial extent of the blackboard.

In fictive motion constructions, then, the sentence refers to the scenario represented in the blended space. However, the meaning is not ''in'' the blended space. Rather, it inheres in the entire network of mental spaces, capturing both the static spatial relationship represented in the reference as well as the imposition of a motion construal on the scenario in question. The coded meaning of (18) prompts the construal of a moving blackboard represented in the blended space. Similarly, Langacker (1999) argues that *mountain range* in (19) refers to a virtual element that undergoes motion in a blended space.

(19)   That mountain range stretches from Mexico to Canada.

He writes, ''. . .the virtual plane . . . can be interpreted as instantiating the blend resulting from the metaphorical mapping. . .. The blend that results involves that object moving – or in a summary view, 'growing' – along the spatial path,'' (Langacker, 1999: 84). Similarly, our claim is that the coded meaning of fictive motion constructions is used to structure the blended space with a model of a mountain range moving from Mexico to Canada. However,

in order to fully understand the sentence, the reader is obliged to unpack the blend into its constituent input spaces.

Interestingly, psycholinguistic studies of the processing of fictive motion constructions offer evidence consistent with the idea that to understand sentences such as (18) and (19), it is necessary to invoke a motion construal. Matlock (2000) asked participants to read stories about travel under various conditions and compared how long it took people to answer questions about spatial relationships in the stories under conditions where the initial travel scenario involved short versus long distances. She hypothesized that if people understand fictive motion statements by mentally simulating the motion they read about in the story, it should take them longer to answer questions about a long trip than a short trip. Indeed, this was the case. Moreover, it also took people longer to answer questions that concerned travel over difficult terrain, which took a long time to travel across, than over easy terrain that was relatively quick to travel across. These findings support the cognitive reality of the motion construal, consistent with our claim that a literal reading of the sentence is used to construct a blended space.

Moreover, fictive motion can be seen as an instantiation of the phenomenon Langacker (1999) calls *virtual change*, as in (20)–(22).

(20)   His newspaper column grew longer every week.

(21)   The trees got shorter at higher altitudes.

(22)   The water got deeper as he swam away from shore.

Each of these examples promotes two readings. First, there is a ''funny'' *value* reading, in which the initial noun phrase is interpreted as referring to a single individual or set of individuals. In (20), for instance, the value reading concerns a single newspaper column that gets longer as time progresses; (21) involves a set of trees that shrink; and (22) involves a subset of water whose depth changes. However, the ''real'' meaning of (20)–(22) involves a *role* reading for the subject NPs. Thus the newspaper column referred to in (20) is not a particular instantiation of the man's column, but rather the abstract concept that subsumes all particular instantiations of it. Similarly, (21) refers to an abstraction that captures different sets of trees at different altitudes, and (22) to an abstraction that captures different subsets of water at differing distances from the shore.

Langacker (1999) suggests that the noun phrases in examples such as (20)–(22) refer to virtual entities rather than actual ones. Moreover, while the change predicates (''grew longer'', ''got shorter'', ''got deeper'') don't apply to the actual columns, trees, and water those noun phrases are ultimately grounded in, they *do* apply to the virtual entities. Indeed, Langacker suggests that the use of change predicates is possible precisely because they apply to the virtual entities, if not to the actual entities that ultimately ground them. The competent speaker thus understands that no single tree changes in height (or moves up the mountain), but that the trees at higher altitudes are shorter than the trees at lower ones.

Fauconnier and Turner (2002) classify such examples as involving *compression*. In conceptual blending theory, the term compression is used to describe an entity in a blended space that has distinct counterparts in multiple input spaces, and, moreover, those

counterparts are related to one another via a *vital relation*, such as cause-effect, representation, the passage of time, separation in space, role–value, and a number of others (see Fauconnier and Turner, 2002 for details). Fauconnier and Turner (2002) suggest that the relationship that allows us to draw mappings between elements in different mental spaces can be ''compressed'' so that a single element in a blended space simultaneously represents all of its counterparts in the various input spaces in the network. Fauconnier and Turner argue that compressions are cognitively useful because they enable speakers to employ ''human scale'' concepts to mediate our comprehension of abstract ideas.

Example (21) for instance involves elements related via analogy – trees at different altitudes – being compressed into identity. Rather than considering the heights of different trees at different altitudes, the compression allows the listener to imagine a single set of trees whose height changes. The possibility of change predication is thus closely related to the compression of analogy into identity. Fauconnier and Turner (2002) suggest that the compression of analogy into identity is a recurrent pattern, along with the compression of disanalogy into change – as when distinct newspaper columns which differ in length are construed as a single column whose length changes. Thus the psychologically salient value reading for these nouns is the object of the grammatically cued change predication in the blended space.

In our consideration of meaning construction in virtual change, then, we see that the coded meaning in (20)–(22) can be seen as crucial for the structuring of the blended space, but that ultimately comprehension relies on the speaker's ability to unpack the blend and apprehend the mappings to elements in the input reference spaces. To understand (21), for example, we begin by setting up a blended space in which a few trees move up a mountain, growing shorter as their altitude increases. Unpacking this blend involves mapping the virtual, compressed trees at the beginning of their journey to a set of tall trees at a low altitude, mapping the virtual, compressed trees in the middle of their journey to another set of trees at a slightly higher altitude, and mapping the virtual compressed trees near the end of their journey to a set of short trees at a high altitude. Further, we can assume that such an expression would operate this way when grounded in the context of a car ride through a mountain range, where a mass of trees appears to change before the person's eyes. Here as elsewhere, the viewpoint of the speaker/conceptualizer plays a fundamental role in meaning construction.

4. Conclusion

One reason frequently cited for the erosion of the literal–nonliteral distinction is the prevalence of conventional metaphoric language. The meanings of such expressions are considered metaphorical by cognitive linguists because they are motivated by cross-domain mappings, but are often considered to be literal because they represent the most frequent meaning of a particular expression. We have echoed previous scholars in noting that the critical factor is the activation of conceptual structure from two or more domains. We noted that the frequent use of a particular metaphorical expression results in the automatization of the activation of these concepts and the mappings between them. Moreover, we suggested that the conventionalization of a metaphorical meaning also

allows speakers to retrieve "emergent" structure, rather than requiring them to develop these inferences on-line.

Further, we argued that the conventional idea of literal language is actually rather important in metaphor interpretation because speakers use the coded meaning to structure the blended space in a conceptual integration network. Full interpretation of the metaphor, however, requires the application of background and contextual knowledge in order to "unpack" the implications of the blended model for the reference space. Analogously, the coded meaning in fictive motion and virtual change constructions is crucial for the construction of a blended space. As in the case of metaphor interpretation, however, the correct interpretation of these constructions requires the use of background and contextual knowledge to apprehend the mappings from elements in the blended space to elements in the input reference spaces.

The intuition that the literal reading of a figurative utterance is 'defective' reflects the fact that it cues the construction of blended cognitive models. The speaker's familiarity with a particular blended model determines its perceived figurativity. Familiarity with a blended model can be driven by experience with a particular expression (as in "On the one hand. . ."), or with the relevant domain mapping as in the mapping between parenthood and care-giving in *zoo parent*, or between path of motion and spatial extent in fictive motion constructions.

Given the importance of background and contextual knowledge for the interpretation of literal and figurative language alike, we propose that blending theorists need to devote more explicit attention to grounding. One reason that grounding has not received much explicit attention in blending theory is that work to date has been aimed at delineating the range of cognitive and linguistic phenomena in which processes of conceptual blending seem to be at work. Moreover, the goal of this work (most notably Fauconnier and Turner, 2002) has been to reveal the commonalities amongst a vast range of examples with the ultimate goal of inducing generalizable principles.

While many scholars interested in literature have drawn inspiration from conceptual blending theory (e.g., Freeman, 1997; Oakley, 1998), and indeed conceptual blending theory itself frequently appeals to literary examples, ultimately conceptual blending theory is intended to be about the cognitive processes that underlie meaning construction and not a theory of literary analysis, per se. Consequently, critiques (such as that implicit in Brandt, 2005) that fault Fauconnier and Turner for not providing a theory of literary analysis are slightly off-target.

Clearly, though, a full account of meaning construction requires a detailed theory of all that is entailed by the phrase 'background cognition' and tools that explain how language users understand particular expressions or images in the specific ways that they do. While the preceding text hardly constitutes a theory of context, it does provide researchers in conceptual blending theory with some important tools for constructing such a theory. In particular, we have suggested that one way to incorporate the notion of context into conceptual blending theory is through the mechanism of the grounding box, akin to the semiotic space as described by Brandt and Brandt (2002). Put succinctly, the grounding box can be used to specify roles, values, and experiences that ground subsequent representations. Further, it provides a mechanism for modeling the here-and-now of discourse management applicable to a real discursive situation or some fictionalized

version thereof. In either instance, the grounding box can be used to represent salient conceptual structure evoked by the on-going situation that plays a determinative role in the way participants construct meaning.

Overall, we have been driven by two concerns. First, we suggest that cognitive semanticists need to take coded meanings seriously, because speakers use this information in the construction of ''hyperliteral'' spaces that couldn't possibly be grounded in the real world. Second, we implore researchers working in conceptual blending theory to give more serious consideration to the precise nature of the role of contextual information in background cognition. The space structuring that occurs in meaning construction requires the application and integration of coded meaning, background knowledge, and contextual information. A complete theory of meaning construction must explore the interplay of these factors. The coded meaning model outlined in this article attempts to nudge us, however slightly, toward a more complete theory than presently exists.

References

Ariel, Mira, 2002a. The demise of a unique concept of literal meaning. Journal of Pragmatics 34 (4), 361–402 (Special issue: literal, minimal and salient meanings).

Ariel, Mira, 2002b. Privileged interactional interpretations. Journal of Pragmatics 34 (8), 1003–1044 (Special issue: to grice or not to grice).

Bach, Kent, 1999. The semantics-pragmatics distinction: what it is and why it matters. In: Bach, Ken (Ed.), The Semantics–Pragmatics Interface from Different Points of View. Elsevier, Oxford, pp. 64–84.

Brandt, Per Aage, 2005. Mental spaces and cognitive semantics: a critical comment. Journal of Pragmatics 37, 1578–1594.

Brandt, Line, Brandt, Per Aage, 2002. Making sense of a blend. Apparatur 4, 62–71.

Brandt, Per Aage, 2002. Causation and narration: a dynamic approach. Almen Semiotik 16, 36–53.

Bühler, Karl, [1934] 1990. Theory of Language: the Representational Function of Language (D.F. Goodwin, Trans.). John Benjamins Press, Amsterdam, Philadelphia.

Carston, Robyn, 1988. Implicature, explicature and truth-theoretic semantics. In: Kempson, R. (Ed.), Mental Representations: the Interface Between Language and Reality. Cambridge University Press, Cambridge, pp. 155–181.

Coulson, Seana, 2001. Semantic Leaps: Frame Shifting and Conceptual Blending in Meaning Construction. Cambridge University Press, Cambridge.

Coulson, Seana, Oakley, Todd, 2000. Blending basics. Cognitive Linguistics 11, 175–196.

Davies, M., 1995. Philosophy of language. In: Bunnin, N., Tsui-James, E. (Eds.), The Blackwell Companion to Philosophy. Blackwell, Oxford, pp. 90–139.

Fauconnier, Gilles, 1994. Mental Spaces: Aspects of Meaning Construction in Natural Language. Cambridge University Press, Cambridge.

Fauconnier, Gilles, 1997. Mappings in Thought and Language. Cambridge University Press, Cambridge.

Fauconnier, Gilles, Turner, Mark, 1998. Conceptual integration networks. Cognitive Science 22, 133–187.

Fauconnier, Gilles, Turner, Mark, 2000. Metaphor, metonymy, and binding. In: Barcelona, Antonio (Ed.), Metaphor and Metonymy at the Crossroads. Walter de Gruyter, Berlin, New York, pp. 133–145.

Fauconnier, Gilles, Turner, Mark, 2002. The Way We Think: Conceptual Blending and the Mind's Hidden Complexities. Basic Books, New York.

Freeman, Margaret, 1997. Grounded spaces, deictic – *self* anaphors in the poetry of Emily Dickinson. Language and Literature 6, 7–28.

Gazdar, G., 1979. Pragmatics: Implicature, Presupposition, and Logical Form. Academic Press, London.

Gibbs Jr., Raymond W., 1994. The Poetics of Mind. Cambridge University Press, Cambridge.

Gibbs Jr., Raymond W., 2000. Making good psychology out of blending theory. Cognitive Linguistics 11, 347–358.

Giora, Rachel, 1997. Understanding figurative and literal language: the graded salience hypothesis. Cognitive Linguistics 8, 183–206.

Giora, Rachel, 2003. On our Mind: Salience, Context, and Figurative Language. Oxford University Press, London.

Givon, Talmy, 1990. Syntax: a Functional–Typological Introduction, vol. 2. John Benjamins Press, Amsterdam.

Goffman, Erving, 1974. Frame Analysis: an Essay on the Organization of Experience. Harper and Rowe, New York.

Grady, Joseph, 1997. Foundations of meaning: primary metaphors and primary scenes. Doctoral thesis, Linguistics Department, UC California.

Grady, Joseph, Oakley, Todd, Coulson, Seana, 1999. Blending and metaphor. In: Gibbs, R.W., Steen, G. (Eds.), Metaphor in Cognitive Linguistics. John Benjamins Press, Amsterdam, pp. 101–124.

Hopper, Paul, 1979. Aspect and foregrounding in discourse. In: Givón, T. (Ed.), Discourse and Syntax. Academic Press, New York, pp. 89–96.

Hutchins, Edwin, 2005. Material anchors for conceptual blends. Journal of Pragmatics 37, 1555–1577.

Katz, Jerry, 1977. Propositional Structure and Illocutionary Force. Crowell, New York.

Lakoff, George, 1986. The meanings of literal. Metaphor and Symbolic Activity 1, 291–296.

Lakoff, George, 1993. The contemporary theory of metaphor. In: Ortony, A. (Ed.), Metaphor and Thought. Cambridge University Press, Cambridge.

Lakoff, George, Kövecses, Zoltán, 1987. The cognitive model of anger inherent in American English. In: Holland, D., Quinn, N. (Eds.), Cultural Models in Language and Thought. University of Chicago Press, Chicago, pp. 195–221.

Lakoff, George, Johnson, Mark, 1980. Metaphors We Live By. University of Chicago Press, Chicago.

Lakoff, George, Turner, Mark, 1990. More than Cool Reason: a Field Guide to Poetic Metaphor. University of Chicago Press, Chicago.

Langacker, R.W., 1999. Virtual reality. Studies in Linguistic Sciences 29, 77–103.

Langacker, Ronald W., 2002. Concept, Image, and Symbol: the Cognitive Basis of Grammar, second ed. Mouton de Gruyter, Berlin.

Matlock, Teenie, 2000. How real is fictive motion. Ph.D. thesis. University of California Santa Cruz, Santa Cruz, CA.

Oakley, Todd, 1998. Conceptual blending, narrative discourse, and rhetoric. Cognitive Linguistics 9, 321–360.

Recanati, F., 1989. The pragmatics of what is said. Mind and Language 4, 295–329.

Searle, John, 1991. Response: the background of intentionality and action. In: Lepore, E., Van Gulick, R. (Eds.), John Searle and His Critics.Blackwell, Cambridge, MA, pp. 289–300.

Sweetser, Eve, 1990. From Etymology to Pragmatics: Metaphorical and Cultural Aspects of Semantic Structure. Cambridge University Press, Cambridge.

Talmy, Leonard, 2000. Toward a Cognitive Semantics: vol. I: Concept Structuring Systems. The MIT Press, Cambridge, MA, pp. 44–87.

Turner, Mark, 1997. Figure. In: Cacciari, C., Gibbs, R., Katz, A., Turner, M. (Eds.), Figurative Thought and Language. Oxford University Press, New York.

Turner, Mark, 2001. Cognitive Dimensions of Social Science. Oxford University Press, New York.

Wolff, Phillip, Gentner, Dedre, 2000. Evidence for role-neutral initial processing of metaphors. Journal of Experimental Psychology: Learning, Memory, and Cognition 26 (2), 529–541.

Seana Coulson is an Assistant Professor in the Cognitive Science Department at the University of California, San Diego. Previous work includes *Semantic Leaps: Frame-shifting and Conceptual Blending in Meaning Construction* (2000).

Todd Oakley is an Associate Professor in the English and Cognitive Science Departments at Case Western Reserve University. He has published widely on conceptual integration (blending) and is currently completing a book length project tentatively titled *The Elements of Attention: Meaning Construction in the Human Sciences*.