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14   Blending and metaphor

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1   Introduction

The framework sometimes referred to as 'conceptual metaphor theory', with its origins in Lakoff and Johnson (1980), is one of the central areas of research in the more general field of cognitive linguistics. Within this field, the notions of 'source domains' and 'target domains', 'invariance', 'mappings', and so forth have become a common, though not universal, vocabulary for discussing the linguistic and conceptual phenomena of metaphor. The findings and principles of this framework have been applied in numerous studies, both within and outside of the field of linguistics.

A more recent framework, proposed by Fauconnier and Turner (1994; 1998) seeks to explain much of the same linguistic data, and also to unify the analysis of metaphor with the analysis of a variety of other linguistic and conceptual phenomena. This framework – referred to variously as the theory of 'blending', 'conceptual blending', and 'conceptual integration' – shares many aspects of conceptual metaphor theory (CMT). For instance, both approaches treat metaphor as a conceptual rather than a purely linguistic phenomenon; both involve systematic projection of language, imagery and inferential structure between conceptual domains; both propose constraints on this projection; and so forth. However, there are also important differences between the approaches: CMT posits relationships between pairs of mental representations, while blending theory (BT) allows for more than two; CMT has defined metaphor as a strictly directional phenomenon, while BT has not; and, whereas CMT analyses are typically concerned with entrenched conceptual relationships (and the ways in which they may be elaborated), BT research often focuses on novel conceptualizations which may be short-lived.

In this article we explore the relationship between BT, CMT and the phenomena they address, arguing that the two approaches are complementary. In particular, the cross-domain relationships which have been identified by CMT researchers shape and constrain the more complex process of conceptual blending. The nature of this relationship has relevance for anyone interested in the conceptual analysis of language and, more broadly, for anyone interested in conceptual structure.

We begin with an overview of the BT framework, focusing on similarities and differences with the CMT framework.

2   Blending theory and conceptual metaphor theory

2.1 Domains vs. mental spaces

In the CMT framework, metaphors are analyzed as stable and systematic relationships between two conceptual 'domains'. In a metaphorical expression like:

(1)   The committee has kept me in the dark about this matter.

language and conceptual structure from the 'source' domain of vision is used to depict a situation in the 'target' domain of knowledge and understanding. Particular elements of the source and target domains are picked out through a combination of the source language used ('in the dark') and the relevant conceptual metaphor, a 'mapping' – presumably stored as a knowledge structure in long-term memory – which tells us how elements in the two domains line up with each other. In this metaphor, knowledge structures which concern seeing have been put into correspondence with structures concerning knowledge and awareness. Because the mapping is principled, ignorance is associated with darkness as well as other conditions which preclude sight. In fact, thanks to the general mapping between visual perception and intellectual activity, nearly any concept related to the experience of vision is likely to have a clear counterpart in the realm of knowledge and ideas. We easily understand a novel sentence like 'You'd need an electron microscope to find the point of this article' – and the conceptual metaphor is the mechanism by which we interpret such references.[1]

In BT, by contrast, the basic unit of cognitive organization is not the domain but the 'mental space' (Fauconnier, 1994 [1985]), a partial and temporary representational structure which speakers construct when thinking or talking about a perceived, imagined, past, present, or future situation. Mental spaces (or, 'spaces', for short) are not equivalent to domains, but, rather, they depend on them: spaces represent particular scenarios which are structured by given domains. For instance, a BT account of example 1 would involve a space in which the agent is standing in the dark. While this representation appeals to our knowledge of visual experience, the recruited structure is only a small subset of knowledge of that domain. In short, a mental space is a short-term construct informed by the more general and more stable knowledge structures associated with a particular domain.

2.2 Two domains vs. four spaces

While CMT analyses involve mappings between precisely two conceptual structures, BT typically makes use of a four-space model. These spaces include two 'input' spaces (which, in a metaphorical case, are associated with the source and target of CMT), plus a 'generic' space, representing conceptual structure that is shared by both inputs, and the 'blend' space, where material from the inputs combines and interacts. A BT account of example 1 would include the following spaces: an input space drawing on the domain of

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vision, in which a person (A) is surrounded by darkness; another input space, drawing on the domain of intellectual activity, in which a committee has withheld information from an individual (A'); a mapping between these spaces, specifying that A and A' are to be taken as one and the same person, that the person's inability to see corresponds to unawareness, and so forth; a generic space containing the shared material the two inputs have in common (roughly, 'a person who has no access to a particular stimulus'); and the blended space, in which a committee is causing an individual to remain in the dark.

Note that in the 4-space model material is projected from both the source and target spaces to the blend. This arrangement contrasts with the simple, unidirectional projection posited by CMT, in which mappings are from source to target.

2.3 Emergent structure

One of the chief motivations for BT, according to proponents, is that the four-space model can account for phenomena that are not explicitly addressed by mechanisms of the two-domain model. Consider, for example, the well-worn metaphor

(2)   This surgeon is a butcher.

intended as a damning statement about an incompetent practitioner (Veale, 1996). Initially, the metaphor may seem to be explainable in terms of direct projection from the source domain of butchery to the target domain of surgery, guided by a series of fixed counterpart mappings: 'butcher' onto 'surgeon'; 'animal' (cow) maps onto 'human being'; 'commodity' onto 'patient'; 'cleaver' onto 'scalpel'; and so forth. This analysis of the cross-domain relationships, however, cannot by itself explain a crucial element of the statement's meaning: The surgeon is incompetent. A butcher, though less prestigious than a surgeon, is typically competent at what he does and may be highly respected. The notion of incompetence is not being projected from source to target.

Discussions in the CMT tradition have touched on some related points. Lakoff & Turner (1989:79), for instance, ask, in the course of discussing personifications of death, 'why is the reaper grim?' After all, real reapers are not necessarily grim, any more than butchers are necessarily incompetent. Their answer, in part, is that '[t]he way we feel about the appearance and character of the personification must correspond to the way we feel about the event.' This is an intuitively satisfying explanation for the reaper's grimness, but, as Lakoff & Turner point out, there are independent reasons why death is personified as a reaper in the first place, including a metaphorical conceptualization of the human lifecycle as the lifecycle of a plant. We cannot apply the same logic to the case of the incompetent butcher: Why would we select a butcher as an appropriate source image for a surgeon, and how would that selection (in itself, without requiring us to specify 'a bad butcher' or the like) communicate the notion of incompetence? The intuitive answer is that the selection of the source image, and the interpretation of the sentence, depend partly on contrasts between surgeons and butchers; this is a factor which the mechanisms of CMT cannot cope with directly.

The BT model accounts for the inference of incompetence as follows. First, the blend inherits some structure from each of the inputs (in accordance with constraining principles, discussed below). From the target input space, structured by the domain of SURGERY, it inherits such elements as the identity of a particular person being operated on (i.e. the speaker), the identity of another individual who is performing the operation, and perhaps details of the operating room setting. From the source input space, which draws on the domain of BUTCHERY, it inherits the role 'butcher' and associated activities. The two input spaces share some structure, represented in the generic space, in which a person uses a sharp instrument to perform a procedure on some other being.

In Figure 1, solid lines represent the cross-space correspondences that constitute the mapping between the input spaces, dotted lines represent projections between spaces, and the dashed line between the Surgeon role in Input 1 and the Butcher role in the blend represents the fact that the butcher in the blend is associated with the surgeon in the target space (see the discussion of 'fusion with accommodation' in Section 5.1).
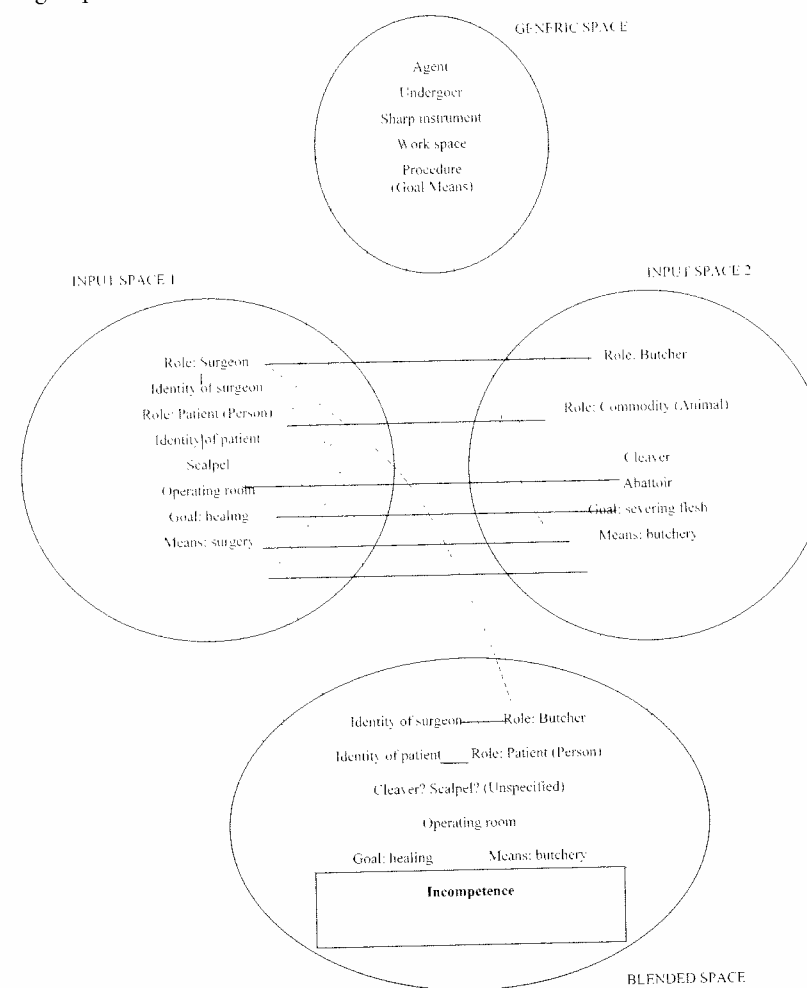

Figure 1 Conceptual integration network: surgeon as butcher

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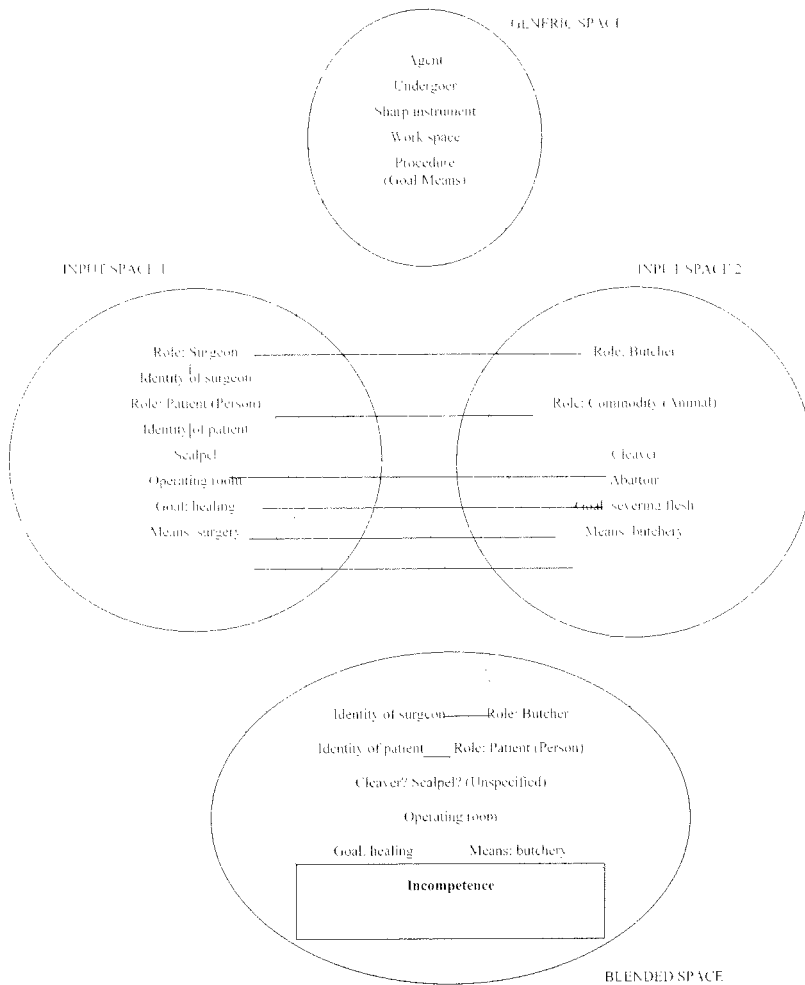

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Besides inheriting partial structure from each input space, the blend develops 'emergent' content of its own, which results from the juxtaposition of elements from the inputs. In particular, the BUTCHERY space projects a means-end relationship incompatible with the means-end relationship in the SURGERY space. In butchery, the goal of the procedure is to kill the animal and then sever its flesh from its bones. By contrast, the default goal in surgery is to heal the patient. In the blended space, the means of BUTCHERY have been combined with the ends, the individuals and the surgical context of the SURGERY space. The incongruity of the butcher's means with the surgeon's ends leads to the central inference that the butcher is incompetent (see the box within the blended space in figure 1). This emergent property of the blend cannot be captured so explicitly within a CMT-style analysis focusing on correspondences and projections from source to target.

2.4 On-line processing and entrenchment

Imagine we were observing a young, apprentice butcher at work, taking too much time and being too tentative as he cut up a piece of meat. Someone might comment,

(3)   He's not a butcher, he's a surgeon.

In context, this sentence could be intended and understood as a negative evaluation of the butcher's competence. Casting him as a surgeon highlights the incongruity between his methods and those appropriate to a butcher.

Since the blend is probably novel at the time it is uttered, this example illustrates the conception of blending as an on-line, real-time process that creates new meaning through the juxtaposition of familiar material. A sentence like 2 probably draws on conventional associations with the word butcher, and the blending analysis may really be an account of the historical derivation of such usages, rather than of the on-line processing a hearer might use today. But sentence 3, which depends on a very similar conceptual integration network, calls more strongly for explanation in terms of real-time processing by means of a cognitive structure like the one represented in the blending diagrams.

Whereas CMT has been primarily concerned with identifying regular, conventional patterns of metaphorical conceptualization (and explaining motivated extensions of these conventional structures), BT has often explicitly addressed itself to novel and unique examples which do not arise from entrenched cross-domain relationships. Since we encounter so many novel blends – e.g. in cartoons, jokes, newly coined terms, terms we apply in unusual ways, etc. – and since we create and understand them so effortlessly, such examples suggest that the processes used to generate and interpret blends are well-developed, basic elements of our cognitive machinery.

2.5 Basic processes of blending

As conceived within BT, blending involves three basic processes – 'composition', 'completion', and 'elaboration'. Composition, the most straightforward process, refers to the projection of content from each of the inputs into the blended space. Sometimes this

process involves the 'fusion' of elements from the inputs, as when the blend contains only a single individual who is associated with the butcher from one space and the surgeon from the other. The representations resulting from the composition process may or may not be realistic. For instance, it is not plausible that a butcher would be allowed to operate on a surgery patient, but nonetheless we easily construct and manipulate such a blended image.

Completion is the filling out of a pattern in the blend, evoked when structure projected from the input spaces matches information in long-term memory. For example, when we mentally project a butcher into an operating room, we end up introducing the notion of incompetence and/or malice into the scene as well, in order to make sense of the scene. We complete our understanding of the scenario by introducing a new feature of the person, prompted by the juxtaposition of elements from the inputs. The idea of destructive, inappropriate action calls to mind the notion of an incompetent and/or malicious person. In this way, the completion process is often a source of emergent content in the blend.

Finally, elaboration is the simulated mental performance of the event in the blend, which we may continue indefinitely. For instance, we might proceed from the image of a butcher carving a patient to the even more grotesque image of a butcher packaging the patient's tissue as cold cuts. Once the connections to long term knowledge about operations and butchery have been made, we are able to imagine scenarios which unfold along various possible trajectories.

At each of these stages there is the potential for emergence of new content, not available from either of the input spaces. New juxtapositions, new frames, new features all arise when we combine elements from distinct mental spaces. These bits of emergent structure (cf. Hofstadter's notion of 'slippage') are chief diagnostics for the occurrence of blending.[2]

2.6 Optimality principles of BT

Fauconnier and Turner (1998) lay out five 'optimality principles' of conceptual blending, constraints under which blends work most effectively. These are:

Integration: The scenario in the blended space should be a well-integrated scene.

Web: Tight connections between the blend and the inputs should be maintained, so that an event in one of the input spaces, for instance, is construed as implying a corresponding event in the blend.

Unpacking: It should be easy to reconstruct the inputs and the network of connections, given the blend.

Topology: Elements in the blend should participate in the same sorts of relations as their counterparts in the inputs.

Good Reason: If an element appears in the blend, it should have meaning.

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An additional principle, leading to some of the fanciful imagery encountered in blends, is referred to as Metonymic Tightening: Relationships between elements from the same input should become as close as possible within the blend. For instance, Western images of personified Death often depict the figure as a skeleton, thus closely associating the event of death with an object that, in our more literal understandings, is indirectly but saliently associated with it.

There is tension among some of these principles, and so each blend satisfies them to varying degrees.[3]

Next, we move to a more detailed discussion of a particular metaphoric blend.

3   The ship of state

This sentence taken from a piece of political commentary illustrates the common conceptualization of a nation or society as a ship:

(4)   With Trent Lott as Senate Majority Leader, and Gingrich at the helm in the House, the list to the Right could destabilize the entire Ship of State.[4]

Before examining the details of this particular blend, let us look at the conventional mapping it builds upon. As it is used in popular discourse, the Nation-as-Ship metaphor includes at least the following cross-domain correspondences:

Nation	Ship
National policies/actions	Ship's course
Determining national policies/actions	Steering the ship
National success/improvement	Forward motion of the ship
National failures/problems	Sailing mishaps (e.g., foundering)
Circumstances affecting the nation (e.g. on the political or economic levels)	Sea conditions

Consider the following attested instance of the metaphor:

(5)   Without the consent of our fellow citizens, we lose our moral authority to steer the ship of state.[5]

The metaphorical correspondences underlying example 5 reflect the conventional mapping described above, with the ship's course standing for the nation's policies, and determining the ship's course (steering it) corresponding to determining the nation's policies. The next example evokes a richer scenario.

(6)   The [Sri Lankan] ship of state needs to radically alter course; weather the stormy seas ahead and enter safe harbour.[6]

Here we have the image of a harbor in addition to the more standard notion of sea conditions. The harbor stands presumably for stable political and economic circumstances.

While the Nation-as-Ship is a conventional conceptualization, it is also related to more fundamental metaphorical mappings, such as ACTION IS SELF-PROPELLED MOTION, COURSES OF ACTION ARE PATHS, TIME IS MOTION, A SOCIAL RELATIONSHIP IS PHYSICAL PROXIMITY (e.g., within a single sailing vessel), CIRCUMSTANCES ARE WEATHER, STATES ARE LOCATIONS and so forth. All these conventional metaphors help motivate the framing of a nation and its history as a ship plying the seas. The idea that simple metaphors interact to yield more elaborate conceptualizations has been discussed by researchers working in the CMT framework. (See, for instance, Lakoff & Turner's (1989) discussion of 'composite' metaphors, and Grady's (1997) more explicit analysis of the 'unification' or 'binding' of metaphors.) The blending framework offers a neat way of representing this complex interaction of concepts and links, since it explicitly allows for multiple spaces and multiple iterations of the integration process. One blend may be the input for another.

More significantly, the blending framework here offers a way of accounting for those elements of the Nation-as-ship image that have no specific counterparts in the target space of nations and politics. For instance, ships have very particular shapes and are made of particular materials. These important aspects of ships have no conventional counterparts in the target domain of nations, but they figure nonetheless in any metaphorical projection of the ship frame. We simply cannot conceive of ships without evoking some aspects of their physical character.

Within the blending framework, we can account for this fact in terms of pattern completion: Once we have evoked, by means of more basic metaphors, the image of a large container holding many people, or of a society moving forward through space, and/or the idea that political events are partially determined by the (metaphorical) weather, these images may match, and call up, stored representations of a ship, and then all other elements of the ship domain are immediately available for recruitment (i.e. they are 'primed'). The ship image in the blend integrates a number of metaphorical understandings of society. Once it is evoked, it may become as elaborate as our imaginations will allow, and like any other conceptualization it has the potential to become conventional.

The Lott and Gingrich example in 4 provides a clear example of how metaphoric expressions may recruit more mappings than those between a single source and target domain. For instance, this example introduces the notion of right-hand directionality (i.e. starboard, in the context of a ship), which is independent of the Nations-as-Ships metaphor. The standard association between right-left polarity and conservative-liberal alignments is clearly not based on the ship model, as it is frequently encountered in contexts where there is no ship imagery.

Furthermore, 4 suggests that the presence of two individuals will predictably cause a ship to list dangerously to one side. While we can imagine a complicated scenario in which their actions could lead to such an outcome – e.g. their handling of very heavy cargo, or their steering and handling of the sails in particular wind conditions – the sentence implies a simpler and more direct causal connection than this. This causal structure appears not to be projected from the source domain of ships, but from

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target domain logic, in which the Senate Majority Leader and the Speaker of the House inevitably have a considerable, direct influence on national policies and the overall political orientation of government. Blending theory suggests that selective projection from the two input spaces yields an image which is inconsistent with our understanding of the source space – two people whose presence is likely to cause a ship to list to one side – but that the web of underlying connections allow us to draw inferences from the blend nonetheless. When we encounter sentence 4, we easily infer that the strong shift towards conservatism may lead to political instability.[7]

4 Metaphors as inputs to blending

If conceptual metaphor theory is primarily concerned with well-established metaphoric associations between concepts, and blending theory focuses on the ability to combine elements from familiar conceptualizations into new and meaningful ones, then conceptual metaphors are among the stable structures available for exploitation by the blending process. As we have just seen in the ship of state examples, conventional metaphors feed the blending process by establishing links between elements in distinct domains and spaces. In this section we explore this relationship in a bit more detail.

4.1 Types of counterpart connection

The network of connections which ultimately constitutes a blend depends first on the establishment of links between the input spaces (Fauconnier & Turner, 1998). These counterpart relations guide the construction of the blend.

Cross-space counterparts may be related to each other in a variety of ways. For instance, in the case of an individual 'kept in the dark' by a committee (see Section 2), the counterpart relationship between the person (in one input) who is in darkness and the person (in the other input) who is kept uninformed, is based on Identity. The same individual is represented in each input space, and these two representations are, quite naturally, linked, in a way that helps guide the construction and interpretation of the blend.

Other types of counterpart relationship across mental spaces include the connection between a role and a value – e.g., the connection between 'Jocasta' and 'Oedipus' mother', discussed by Fauconnier (1994 [1985]) – and the connection between an entity and a representation of the entity, such as a man and his portrait. Similarity and Analogy are relations which play obvious roles in many conceptual integration networks, including ones we call metaphorical blends. For instance, surgeons and butchers share the generic structure of a person wielding a sharp object to cut flesh.

Conventional metaphors can also provide the counterpart mappings to launch blends. For instance, the metaphorical association between nations and ships is thoroughly conventional, and forms part of many people's conceptual repertoires. What started out (undoubtedly) as some individual's creative, on-line, conceptual achievement has become a shared, entrenched conceptualization, presumably because the blend proved

successful for some purpose, therefore arose again, and through repeated experience became conventional. As a result, the metaphorical mapping between the nation and the ship, the nation's history and the ship's course over the sea, and so forth, is now stored in memory and provides a trigger that allows conceptual blending to proceed, including the kinds of creative conceptual manipulation we examined in the last section.

Of course for a conventional metaphoric blend to have arisen in the first place, it must, itself, be based on some kind of counterpart mapping. This is an area where CMT, and the associated body of work accumulated over the past eighteen years, informs the blending framework. Numerous principles regarding the kinds of concepts which become associated by conventional metaphor have been uncovered and described, including patterns in the relationship between the image-schematic structure of source and target ('Invariance', Brugman, 1990; Lakoff, 1990; Turner, 1991), the relationships holding among different mappings, the kinds of content that may be associated with source and target[8], and the ways in which source and target may or may not be similar.

Importantly, there is a class of entrenched metaphors which are not based on similarity or analogy, and which are therefore unlike the metaphoric counterpart relations which arise on-line.

(7) a. These two colors are not particularly close [i.e. similar].
     b. His sunny smile lit up the room.
     c. Tomorrow is a big day for this organization.

These sentences are illustrations, respectively, of the following conventional metaphors: SIMILARITY IS PROXIMITY, HAPPINESS IS BRIGHTNESS, IMPORTANCE IS SIZE (all known by various names in the conceptual metaphor literature). There is no obvious sense in which the concepts paired in these metaphors are similar or analogous to one another. Each is scalar in some sense, but this is not sufficient motivation for the particular pairings evidenced here. (Consider the fact that Brightness may not stand for Similarity, and so forth.) Instead these metaphors are most plausibly explained as entrenched conceptual associations arising from recurring correlations in experience. Just as the recurring correlation between quantity and height (e.g. of a pile) motivates the metaphor MORE IS UP (as in, 'Crime figures have soared'), these metaphors are motivated by recurrent types of episodes which bring together particular dimensions of experience. For instance, brightness is correlated with warmth and increased visibility, both of which trigger contentment (cf. HAPPINESS IS BRIGHTNESS). Lakoff & Johnson (1980) argued convincingly that various metaphors relating 'UP' to other concepts could not be based on objective similarity or shared features, and the same holds in the cases mentioned here. They are not based on similarity or analogy, but must instead be based on experiential correlation.[9]

Metaphors like SIMILARITY IS PROXIMITY, HAPPINESS IS BRIGHTNESS, and IMPORTANCE IS SIZE are 'primary metaphors' (see Grady et al., 1996; Grady, 1997; Lakoff & Johnson in press), a special class of entrenched associations, based on neither similarity nor analogy. They seem to constitute a distinct sort of counterpart connection on which blends may be based.

successful for some purpose, therefore arose again, and through repeated experience became conventional. As a result, the metaphorical mapping between the nation and the ship, the nation's history and the ship's course over the sea, and so forth, is now stored in memory and provides a trigger that allows conceptual blending to proceed, including the kinds of creative conceptual manipulation we examined in the last section.

Of course for a conventional metaphoric blend to have arisen in the first place, it must, itself, be based on some kind of counterpart mapping. This is an area where CMT, and the associated body of work accumulated over the past eighteen years, informs the blending framework. Numerous principles regarding the kinds of concepts which become associated by conventional metaphor have been uncovered and described, including patterns in the relationship between the image-schematic structure of source and target ('Invariance', Brugman, 1990; Lakoff, 1990; Turner, 1991), the relationships holding among different mappings, the kinds of content that may be associated with source and target[8], and the ways in which source and target may or may not be similar.

Importantly, there is a class of entrenched metaphors which are not based on similarity or analogy, and which are therefore unlike the metaphoric counterpart relations which arise on-line.

(7) a.   These two colors are not particularly close [i.e. similar].
     b.   His sunny smile lit up the room.
     c.   Tomorrow is a big day for this organization.

These sentences are illustrations, respectively, of the following conventional metaphors: SIMILARITY IS PROXIMITY, HAPPINESS IS BRIGHTNESS, IMPORTANCE IS SIZE (all known by various names in the conceptual metaphor literature). There is no obvious sense in which the concepts paired in these metaphors are similar or analogous to one another. Each is scalar in some sense, but this is not sufficient motivation for the particular pairings evidenced here. (Consider the fact that Brightness may not stand for Similarity, and so forth.) Instead these metaphors are most plausibly explained as entrenched conceptual associations arising from recurring correlations in experience. Just as the recurring correlation between quantity and height (e.g. of a pile) motivates the metaphor MORE IS UP (as in, 'Crime figures have soared'), these metaphors are motivated by recurrent types of episodes which bring together particular dimensions of experience. For instance, brightness is correlated with warmth and increased visibility, both of which trigger contentment (cf. HAPPINESS IS BRIGHTNESS). Lakoff & Johnson (1980) argued convincingly that various metaphors relating 'UP' to other concepts could not be based on objective similarity or shared features, and the same holds in the cases mentioned here. They are not based on similarity or analogy, but must instead be based on experiential correlation.[9]

Metaphors like SIMILARITY IS PROXIMITY, HAPPINESS IS BRIGHTNESS, and IMPORTANCE IS SIZE are 'primary metaphors' (see Grady et al., 1996; Grady, 1997; Lakoff & Johnson in press), a special class of entrenched associations, based on neither similarity nor analogy. They seem to constitute a distinct sort of counterpart connection on which blends may be based.

4.2 Complex metaphorical blends

Since blending is an opportunistic process of on-line space-building, any conceptualization that starts out as a primary metaphor, or other simple conceptual association, is susceptible to being elaborated. The source concept of any basic metaphor can trigger the construction of a richer image. If difficulty is understood as heaviness – due to a correlation between, on the one hand, our sensory judgment of mass and, on the other, affective states associated with exertion – then we can talk about tons of work. If a cheery disposition is metaphorically associated with bright light, then we understand what a thousand-kilowatt smile must be like (given some additional input from our knowledge of electricity). If the experience of moving forward is correlated with an affective state telling us we are about to achieve some purpose, then the Ship of State makes headway as the nation works to accomplish its objectives.

The Nation-as-Ship example also illustrates the way in which multiple simple metaphors can be relevant within a single complex blend. The ship's forward motion is understood in terms of a conventional metaphorical association with goals more generally. The notion of 'safe harbour,' as in example 7, derives from a metaphorical understanding of circumstances as locations and surroundings. While the image of a 'lookout' is not a conventional part of the Nation-as-Ship blend, it can easily be incorporated, and linked to a target domain notion of anticipating future events (i.e. foresight), based on a metaphorical association between vision and thought (cf. KNOW-ING IS SEEING). The metaphorical right-left orientation of political parties is another conventional counterpart connection which can be recruited to enrich the blend, as we have seen.

The role of basic metaphors in complex blends illustrates an important principle about the relationship between metaphor and blending: It is particular connections within an entire conceptual integration network which we regard as metaphoric. For instance, it is, in a way, misleading to refer to the Lott-Gingrich example, or the cognitive representation that motivates the words, as 'a metaphor.' Within the conceptual complex that underlies the sentence there are several distinct metaphoric connections – e.g. nation/ship, conservative/right – and the blend as a whole does not represent the systematic mapping of one domain onto another.

Furthermore, metaphoric blends may contain figurative links that are not, themselves, metaphoric. For instance, when we personify death as a skeleton carrying a sickle, we are dealing with a metaphorical image, but one which has been elaborated via the addition of details which do not derive from a metaphoric mapping. The relationship between skeletons and death is not metaphorical but metonymic; skeletons figure literally in scenarios involving death. In accordance with the principle of Metonymic Tightening (see Section 2), the skeleton becomes even more closely associated with Death in the blend than it is in the source input.

In short, conventional metaphoric relationships may be the starting points for the process of creating complex conceptual blends. And identifying a metaphoric relationship holding between source and target elements is sometimes only the starting point for analyzing a blend.

5   What makes a blend metaphoric

Given that many of the blending examples discussed in the BT literature are not metaphoric, it is helpful to understand what characterizes metaphoric blends and distinguishes them from others. As we have seen, some blends depend on counterpart relations dictated by conventional metaphoric associations, such as the one between nations and ships. There are other aspects of blends, though – relating to their structure, their content, and the linguistic and conceptual setting in which they appear – that make them seem metaphoric to us.

5.1 Fusion with accommodation

In a metaphoric blend, prominent counterparts from the input spaces project to a single element in the blended space – they are 'fused'. A single element in the blend corresponds to an element in each of the input spaces. A ship in the blend is linked to a ship in the source space and a nation in the target, a surgeon is linked to both a surgeon and a butcher, and so forth. Intuitively speaking, the point of metaphors is precisely that one thing is depicted as or equated with another. In the blending framework this means a single element in the blended space has links to each of the input spaces.

By contrast, in other sorts of blends these counterparts may project to distinct elements in the blended space. For example, Fauconnier and Turner (1998, and elsewhere) have discussed the following passage, in which a modern philosopher describes his 'debates' with Kant – i.e. his musings over particular topics, in relation to Kant's views of the same topics:

(8)   I claim that reason is a self-developing capacity. Kant disagrees with me on this point. He says it's innate, but I answer that that's begging the question, to which he counters, in Critique of Pure Reason, that only innate ideas have power. But I say to that, what about neuronal group selection? He gives no answer.

The sentences arise from a blended conceptualization in which the two philosophers are imaginatively juxtaposed with each other and engage in conversation about particular issues. In this blend, which strikes us as fictive but not metaphorical, the philosophers who correspond to each other in the two input spaces (and are therefore connected by an Analogy link) are not, in fact, fused in the blended space. Instead, they retain their individual identities, and the nature of their interaction is the focus of the blend.

While the philosophers are projected as distinct participants, other aspects of these input spaces are fused in the blend. For example, the languages of the philosophers are fused into a single language (not necessarily specified), the historical gap between them is collapsed, the geographical settings are also merged, and so forth. Thus fusion alone does not identify metaphors.

Another sort of non-metaphorical fusion occurs in 'framing', a variety of conceptual integration which operates by the same basic principles outlined above (Fauconnier & Turner, 1998). In framing we identify a particular entity with a slot in a more general con-

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Another sort of non-metaphorical fusion occurs in 'framing', a variety of conceptual integration which operates by the same basic principles outlined above (Fauconnier & Turner, 1998). In framing we identify a particular entity with a slot in a more general con-

ceptual frame. For instance, the statement, 'Carl is a bachelor' depends on the following conceptual operation: A particular unmarried man we know ('Carl') is associated with our cultural model of bachelors, which in turn is informed by our models of marriage and so forth (see Fillmore, 1982). Our knowledge of Carl and of the BACHELOR frame represent the input spaces for a conceptual integration. In the blend, Carl is fused with the frame role 'bachelor.'

This example, like framing examples in general, does not strike us as metaphorical, since it represents a particular variety of fusion: the elements which are counterparts in the cross-space mapping are combined by composition in the blend. While all blends are selective in that they only draw on some of our knowledge of the input domains, framing involves counterparts which are essentially compatible, such that information about each serves to specify the fused element in the blend.

Metaphorical blends, on the other hand, involve a different kind of fusion, in which certain very salient aspects of input domain structure are prohibited from entering the blend, and in which some salient structure in the blended space is prevented from floating back to the inputs. That is, there is information from one of the inputs (the target) that must be ignored in the blend: nations do not move across the sea, ignorance is not literally associated with darkness, etc. An important feature of metaphorical fusion of counterparts, then, is that it involves overriding, and therefore not projecting, salient aspects of our knowledge of the target. This sort of asymmetrical projection occurs in any case where the organizing frame in the blend is projected from one input at the expense of the other, e.g. the ship frame in the Nation-as-Ship cases. The fact that source and target must be incompatible in some sense relates to an old claim about metaphor, which can be considered here in a new light.

Philosophers (e.g. Davidson, Grice, Searle) have argued that listeners are cued to interpret a particular reference as metaphorical by anomalies of meaning. On this view, when we hear a statement such as 'Inflation soared,' the impossibility of the event is our cue that the statement is intended metaphorically. Arguing against this claim, Keysar (1989) has shown that subjects are able to interpret a statement like 'Paul is a magician' as a metaphorical reference to Paul's abilities as an accountant, even when Paul is actually a magician by trade. In other words, the recognition of metaphor does not depend on surface anomalies of meaning. In the blending framework the notion of anomaly can be defined with greater subtlety and specificity: the network of conceptual connections which comprises the meaning of the utterance includes a counterpart relation between entities which we know to be incompatible in some important sense. (In Paul's case the counterpart relation is an analogical connection between skillful bookkeeping and the supernatural manipulation of matter). Whether or not this fact is relevant to on-line processing of metaphorical language – still a controversial question among philosophers and psycholinguists – part of what defines metaphors is that they involve (temporary) suppression of critical knowledge of a given conceptual domain, and therefore are not compatible with our understanding of reality. We refer to this particular phenomenon, in which structure from one fused element is blocked, as 'accommodation': the target material yields to the source material, which is explicitly represented in the blend.

Knowing whether the fusion of elements from two inputs involves accommodation depends crucially on how specifically those elements are construed. Consider the issue of language in the Debate-with-Kant example in 8. We do not feel it is metaphoric to report the debate as though it happened in English, even though Kant was a German speaker. This is almost certainly because the details of the languages are not at issue in any part of this conceptual network, and so we might say that each input simply contains the generic notion Language. For the purposes of this blend we are not 'construing' (in the sense of Langacker, 1987) the languages of the philosophers as, specifically, English and German.

To highlight the importance of construal in this case, consider that it is easy to create a context in which a mapping between German and English does feel metaphorical, or at least more metaphorical than in the Kant blend. Imagine reading a philosophy essay written in dense, convoluted English, perhaps overly influenced by translations of Heidegger, and exclaiming, 'This isn't English, it's German!'. Here we have a blend based on the same pairing of counterparts, and yet this case is metaphorical where the previous one is not. This is because in the Bad Essay case we are interested in the particulars of the languages and their differences, while in the Kant case we are only interested at the level of unspecified 'Language,' as a means of communication and medium of debate. That is, one construal profiles features of English and German while the other profiles entities at a more schematic level. In the Kant case, the active representations in the input spaces do not include particulars about language, and so there is no conflicting information to resolve or accommodate. The Bad Essay example, though, does have fusion with accommodation, because it represents a construal at a different level of schematicity; consequently, it is felt to be (more) metaphorical.

Our discussion of fusion with accommodation echoes, in new terms, various discussions of metaphor as a phenomenon of 'category extension,' or 'class inclusion,' and is compatible with psycholinguistic results showing that subjects are more apt to see metaphor in cases where there is greater semantic distance between elements. The CMT principle that source and target come from different 'domains' is also in the same spirit as our more general statement that metaphors involve the fusion of saliently distinct elements from two inputs. Note, though, that metaphoric counterparts do not obligatorily come from different conceptual domains or frames. For instance, a modern philosopher might come out of a colleague's office and mutter, 'I've just spent the afternoon debating with Immanuel Kant!'[10]. Here 'Kant' and his modern counterpart are understood in terms of the same frames and domains, yet the statement would strike some as metaphorical.

Finally, note that if metaphor depends on salient differences between the relevant concepts, this implies that there are degrees of metaphoricity. Many researchers have suggested this (e.g., Fauconnier & Turner, 1998), and the examples here offer further support. While some utterances are prototypically metaphoric and others prototypically nonmetaphoric, there seems to be no hard and fast distinction between these categories.

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5.2 Directionality and asymmetric topicality

Another important feature of metaphoric blends is that their input spaces do not have equal status as topics. In the non-metaphorical Debate-with-Kant blend, both philosophers, along with their positions, are the focus of attention. It is the interaction between the two, and a consideration of their relative merits, that motivate the blend. In other words, each of the inputs has high topicality. A given inference may relate to one more than the other, but both are held up to scrutiny and comparison by means of the blend, and the blend's function is to give us a means of examining the relationship between the two.

Metaphors, by contrast, are distinguished by asymmetric topicality. One of the inputs is topical and the other provides a means of re-framing the first for some conceptual or communicative purpose; these are, respectively, the target and source inputs of the metaphor. For instance, in the Nation-as-ship blend, the nation is the actual topic of interest, the target space; when we use the blend we are interested in conceptualizing, picturing, or describing aspects of the nation, not in understanding more about ships. Similarly, 'My surgeon is a butcher' is a (damning) statement about a surgeon, not a butcher.

Coulson (1997) has pointed out that some metaphorical blends allow us to project inferences in more than one direction. In a joke about the 'Menendez Brothers [Computer] Virus,' the blend establishes a (darkly) humorous connection between actions of the virus and alleged actions of human agents. Erik and Lyle Menendez, two brothers in their twenties, killed their parents and subsequently inherited their substantial wealth. At their widely-publicized trial, the brothers argued that they had been the victims of long-term abuse, and that the killings had therefore been a form of self-defense, although their parents were unarmed at the time. According to the joke, the virus 'eliminates your files, takes the disk space they previously occupied, and then claims it was a victim of physical and sexual abuse on the part of the files it erased' (Coulson, 1997:252). While the joke uses details of the criminal case to explain the virus, which is in this sense the target input of the blend, it also invites inferences about the brothers. Because the criminal case was controversial, one of the effects of the joke is to support a particular view, namely that the Menendez brothers were guilty of murder, and that the defense they offered was absurd. Given that the same network of connections is used to make inferences about the brothers and about the virus, this example is an apparent exception to the principle that metaphors involve asymmetric topicality: A single conceptual integration network – which feels metaphorical and involves fusion (with accommodation) between profiled participants – allows inferences in either direction, and invites us to focus on aspects of each input.

However, the Menendez Brothers Virus blend operates on distinct levels (and possibly in distinct stages) and different directionality is associated with each. An initial understanding of the virus depends on successfully mapping the description of human actions onto the domain of computer operations and files. Understanding the implications about the criminal case is a separate process which involves unpacking one of the input spaces on which the joke is based. (To put it another way, this process involves

retrieval of presuppositions, guided by the connections in the network.) Topicality is asymmetrical during each of these processes.

Moreover, topicality is not the only factor determining the directionality of metaphor. A metaphoric blend which recruits conventional mappings inherits the directionality of those mappings, as the Nation-as-ship blend inherits the directionality of metaphors for change, time, society, political orientation, etc. and maps source concepts onto all these target concepts. Furthermore, there is a long tradition of describing the greater concreteness of metaphoric sources as opposed to targets. Topicality probably correlates with these other factors in that certain kinds of topics are more likely to evoke metaphoric counterparts, which in turn are likely to be relatively rich in sensory content.

5.3 Metaphors vs. counterfactuals: the role of linguistic context

Like metaphors, counterfactuals involve counterpart relations between entities that are construed as essentially different. Consider this hypothetical example, spoken by a senior professor to a junior colleague:

(9) If I were you I'd be working on finishing my book.

Like metaphors, the conceptual blend underlying this sentence involves counterparts, construed as crucially different, which are fused in the blended space; a single entity there corresponds to a different person in each of the inputs. The hypothetical professor does not (and could not) have all the properties of both input professors; it is their differences which motivate the blend. Specifically, the professor in the blend is in the situation of the junior professor, who must publish a book in order to be tenured, but has the attitudes and priorities of the senior professor. If this blend includes fusion of distinct entities, why does it not strike us as metaphorical?

It is likely that one of the factors is the perceived degree of difference between the counterparts. As we mentioned earlier, and as many previous works on metaphor have noted using various terminology, the perceived difference between two entities is an important determinant of how metaphorical an association between them may seem. A sentence starting with 'If I were a cloud' strikes us as more figurative than one starting with 'If I were you.' A sentence starting with 'If I were Napoleon' probably falls in between. This relative scale is plausibly based on the degree of perceived category difference, at the relevant level of abstraction, between the 'I' element and the counterpart in each case.

Another factor, though, is the construction of the sentences themselves. The rhetorical force – i.e. the profiling effects – of counterfactual statements may run contrary to those we associate with metaphor. A sentence starting with 'If I were a cloud' may strike us as less metaphoric than one starting with 'I am a cloud,' since the counterfactual specifically negates the proposition that the two entities can be equated in some sense. That is, while both sentences may be interpreted based on the same network of conceptual links and projections, the profiling may be different in the two cases, such

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that one is more consistent with our prototype of metaphors. Metaphors typically assert counterpart connections without drawing explicit attention to incongruities between the connected entities.

The above concerns suggest that metaphor is not a sharply delineated phenomenon, and underscore the need for a framework like BT which can account for the mapping operations that underlie central and peripheral cases alike.

6   Conclusion

Differences between conceptual metaphor theory and blending theory, such as the distinct nature of directionality in the two frameworks, have led some researchers to treat them as competing theories (e.g. Coulson, 1996). Alternatively, one might consider the two approaches to be incommensurable. After all, CMT addresses recurring patterns in figurative language, while BT seems to focus on the particulars of individual cases. And the phenomena accounted for by CMT consist of stable knowledge structures represented in long-term memory, while BT seeks to model the dynamic evolution of speakers' on-line representations.

In this paper we have taken neither of these positions. Rather, we propose that because they tackle different aspects of metaphoric conceptualization, the two frameworks are largely complementary. The conventional conceptual pairings and one-way mappings studied within CMT are inputs to and constraints on the kinds of dynamic conceptual networks posited within BT.

If we establish that the findings of CMT and BT are consistent, the potential rewards are significant, since this allows us to unify two streams of research into a more general and comprehensive treatment of linguistic and conceptual phenomena. BT researchers have argued that the same principles which speakers use to understand metaphor operate similarly across a wide range of nonmetaphorical phenomena.

The generality of conceptual blending theory derives in part from its roots in mental space theory which treats metaphor as a special case of indirect reference. As our examples illustrate, metaphoric and non-metaphoric conceptualizations alike rely on selective projection from two or more input spaces into a blended space, the establishment of cross-space mappings, structuring the blended space via processes of composition, completion, and elaboration, and subsequent projection of structure from the blended space to the inputs. By treating all sorts of mappings as formally identical at a certain level we can understand the transfer of structure in metaphor as fundamentally similar to the transfer of structure in non-metaphoric instances.

Among the non-metaphoric types of linguistic structure which can be treated in a blending framework are counterfactuals and conditionals. A number of researchers working within the framework of conceptual blending have addressed its implications for how people reason about events which could have happened, but did not (e.g. Fauconnier, 1997; Oakley, 1995, 1998; Turner, 1996). The tools of blending theory, including the cline between identity, similarity, and analogy links, have also proven useful in explaining the variety of complex concept combinations coded for by modified noun phrases. For example, blending theory has been used to explore issues of concept combination in seemingly simple cases like 'red pencil' (Turner & Fauconnier, 1995; Sweetser, in prep.), more exotic cases like 'land yacht' and 'dolphin-safe tuna' (Turner & Fauconnier, 1995), and privative constructions such as 'alleged affair' and 'fake gun' (Coulson & Fauconnier, in press).

Conceptual metaphor theory has often emphasized the role played by metaphors in structuring abstract concepts with cognitive models projected from more concrete source domains. With its additional machinery for recruiting knowledge structures, blending theory has also proven to be powerful in explaining how abstract concepts can be understood with the help of blended models. Although blended models are not always plausible – cf. the debate between Kant and a modern philosopher – blends can promote integrated construals that help us reason about abstract phenomena. Accordingly, a number of researchers have demonstrated the importance of particular blends in the invention of mathematical concepts (Fauconnier & Turner, 1998; Lakoff & Nunez, in press) and proofs (Robert, 1998). Moreover, Maglio & Matlock (1998) demonstrate the roles of distinct conceptual blends as experts and novices interact with Web browsers.

Blending theory has also been taken up by literary theorists interested in the cognitive underpinnings of verbal creativity. For example, Brandt (in press) shows how integration networks can be used to represent the complex flow of inferences and imagery in the poetry of Baudelaire. Turner (1996) shows how the machinery of conceptual blending operates in a wide range of literary genres from simple parables, to the imagery in Dante's Inferno, to Shakespearean drama.

More surprising, perhaps, is the suggestion that the very same integrative mechanisms underlie the most banal aspects of language processing (Turner & Fauconnier, 1995; Mandelblit, 1997). Sweetser (in prep.) demonstrates the ubiquity of blending phenomena and shows how its processes are used to combine the semantic properties of grammatical constructions with the lexical semantics of the words used in their instantiations. Similarly, Fauconnier and Turner (1996) have suggested that integrative mechanisms of blending are needed to understand particular instances of the caused-motion construction such as 'He sneezed the napkin off the table,' (cf. Goldberg, 1996).

In arguing that conceptual metaphor theory and blending theory provide largely complementary formalisms, we have suggested that many of the differences between them reflect their motivation in different aspects of the same data. While the metaphor theorist strives to capture generalizations across a broad range of metaphoric expressions, the blending theorist typically focuses on the particulars of individual examples. Because it is useful to separate entrenched associations in long-term memory from the on-line processes that recruit them, we have argued that the former issue is the province of metaphor theory, and the latter, the province of blending theory. Consequently, metaphor theory will continue to address such questions as which concepts are conventionally associated with each other, how and why such conventional associations arise, and how cross-domain mappings are structured. As argued above, such issues are central to the question of how metaphoric blends arise, and may have important implications for the quasi-metaphoric blending in other sorts of examples. To be sure, a full understanding of the conceptual feats that underlie the examples considered above will require both a rich theory of metaphor and a fully specified model of conceptual blending.

combination in seemingly simple cases like 'red pencil' (Turner & Fauconnier, 1995; Sweetser, in prep.), more exotic cases like 'land yacht' and 'dolphin-safe tuna' (Turner & Fauconnier, 1995), and privative constructions such as 'alleged affair' and 'fake gun' (Coulson & Fauconnier, in press).

Conceptual metaphor theory has often emphasized the role played by metaphors in structuring abstract concepts with cognitive models projected from more concrete source domains. With its additional machinery for recruiting knowledge structures, blending theory has also proven to be powerful in explaining how abstract concepts can be understood with the help of blended models. Although blended models are not always plausible – cf. the debate between Kant and a modern philosopher – blends can promote integrated construals that help us reason about abstract phenomena. Accordingly, a number of researchers have demonstrated the importance of particular blends in the invention of mathematical concepts (Fauconnier & Turner, 1998; Lakoff & Nunez, in press) and proofs (Robert, 1998). Moreover, Maglio & Matlock (1998) demonstrate the roles of distinct conceptual blends as experts and novices interact with Web browsers.

Blending theory has also been taken up by literary theorists interested in the cognitive underpinnings of verbal creativity. For example, Brandt (in press) shows how integration networks can be used to represent the complex flow of inferences and imagery in the poetry of Baudelaire. Turner (1996) shows how the machinery of conceptual blending operates in a wide range of literary genres from simple parables, to the imagery in Dante's Inferno, to Shakespearean drama.

More surprising, perhaps, is the suggestion that the very same integrative mechanisms underlie the most banal aspects of language processing (Turner & Fauconnier, 1995; Mandelblit, 1997). Sweetser (in prep.) demonstrates the ubiquity of blending phenomena and shows how its processes are used to combine the semantic properties of grammatical constructions with the lexical semantics of the words used in their instantiations. Similarly, Fauconnier and Turner (1996) have suggested that integrative mechanisms of blending are needed to understand particular instances of the caused-motion construction such as 'He sneezed the napkin off the table,' (cf. Goldberg, 1996).

In arguing that conceptual metaphor theory and blending theory provide largely complementary formalisms, we have suggested that many of the differences between them reflect their motivation in different aspects of the same data. While the metaphor theorist strives to capture generalizations across a broad range of metaphoric expressions, the blending theorist typically focuses on the particulars of individual examples. Because it is useful to separate entrenched associations in long-term memory from the on-line processes that recruit them, we have argued that the former issue is the province of metaphor theory, and the latter, the province of blending theory. Consequently, metaphor theory will continue to address such questions as which concepts are conventionally associated with each other, how and why such conventional associations arise, and how cross-domain mappings are structured. As argued above, such issues are central to the question of how metaphoric blends arise, and may have important implications for the quasi-metaphoric blending in other sorts of examples. To be sure, a full understanding of the conceptual feats that underlie the examples considered above will require both a rich theory of metaphor and a fully specified model of conceptual blending.

Notes

1   Grady (1997) has argued that conceptual domains are often too general as units of analysis for conceptual metaphors, and that many mappings are better described as associations between particular source and target *concepts*, belonging to distinct domains. Both approaches treat metaphors as relationships between established, long-term knowledge structures.

2   This is *not* to say that emergent structure is a necessary feature of conceptual blends: some blends are truth-functionally compositional. However, it is the frequent need to account for emergent structure that motivates BT.

3   See Gentner (1983) for another approach to constraining and optimizing cross-domain mappings. Gentner's framework applies to relations between (what BT treats as) input spaces to a blend.

4   From Carol R. Campbell, 'Cave Man Bill And The Doleful State of American Politics,' published by The Written Word, an on-line journal of economic, political and social commentary

5   Bruce E. Johnson, 'Making a difference,' Federal Executive Institute Alumni Association Newsletter President's Report, April 1997, No. 225.

6   From 'Two years of PA [the People's Alliance]: the state of the Nation,' Editorial in 'The Sunday Times [of Sri Lanka] on the Web' Aug. 18, 1996.

7   While a reference to the ship's course (rather than to listing) might have been more conventional in this context, the fact that we easily interpret the sentence demands that we account for it as it stands. In the BT framework it does not matter whether such an improbable image results from deliberate innovation or the accidental 'mixing' of metaphors.

8   See, e.g., Grady's (1997) discussion of primary metaphors, in which source concepts have 'image content' while target concepts have 'response content.'

9   For more on the contrast between *resemblance metaphors* and *correlation metaphors*, see Grady (1999).

10   This statement will strike some readers, but not others, as metaphorical. The dividing line between metaphor and other sorts of figurative reference is not sharply drawn or universally agreed upon.

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Section V
Introduction

Cognitive approaches to grammar

Benjamin Bergen

Cognitive approaches to grammar developed most immediately as an offshoot of the generative syntax paradigm. Consequently, they show a notable resemblance to their generative predecessors. Most clearly, both take as their object of study individual mental grammars, rather than the externalized language of the community. Both produce highly detailed analyses of the form and combinatorial possibilities afforded by grammatical systems. And both take linguistic phenomena as informative about universal aspects of human cognition.

However, cognitive approaches to grammar deviate substantially from the generative paradigm in several ways, as Langacker and Goldberg explain below in their descriptions of Cognitive and Construction Grammar. First is the centrality of meaning (including semantics and pragmatics) in representations of grammar. In contrast with generative theories, which assume that linguistic subsystems are modular – permitting syntax to be studied in isolation from meaning or function – cognitive approaches tightly integrate meaning into both descriptions and explanations of language phenomena, as shown by Talmy, below. On the cognitive view, it is insufficient to describe the form of the passive, for example, without also detailing its function, and similarly the meaning of a piece of language can explain formal characteristics. Second is the scope of grammar. Cognitive approaches to grammar view all combinatorial linguistic knowledge as the substance of grammar. As a result, whereas generative grammar focuses exclusively on a privileged 'core', cognitively oriented grammars have much broader scope, including phenomena as diverse as argument structure constructions, morphological patterns, and idioms, as shown by Fillmore, Kay, and O'Connor, below. The ideal grammatical description is thus the minimal set of grammatical units that adequately cover the full range of specific and general knowledge that language users have.