# Polysemy and Conceptual Blending



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Science is an eternal battle against common sense. How can it be the earth that moves, when we so clearly see the sun travelling majestically across the sky? Since when do feathers fall as fast as stones? Where did imaginary numbers ever come from?

In thinking about meaning, common sense is no less of an obstacle. What could be more obvious than the platitude that words have meanings, that "dog" means dog and "house" means house? This reasonable and simple view serves us well in everyday life and is widely shared. And yet there is considerable evidence that it is deeply wrong—not just wrong because it is oversimplified and in need of refinement, but more deeply wrong and misleading in the very notion of "meaning" that it takes for granted.

The clash between our common-sense, self-evident view of meaning contained in words and the infinitely more complex and remarkable reality of meaning construction has certainly not escaped the notice of thinkers through the ages. But it is only recently that we have started to come to grips directly with the dynamics of on-line meaning construction and the wealth and variety of cognitive capacities that we bring to bear on the most ordinary, mundane situations.

It has been useful, in approaching such issues, to forget notions like "meaning of an expression", "semantic representation", "truth-function", and the like, and to think instead of the *meaning potential* of a language form. Meaning potential is the essentially unlimited number of ways in which an expression can prompt dynamic cognitive processes, which include conceptual connections, mappings, blends, and simulations. Such processes are

inherently creative, and we recognize them as such when they are triggered or produced by art and literature. In everyday life, the creativity is hidden by the largely unconscious and extremely swift nature of the myriad cognitive operations that enter into the simplest of our meaning constructions. It is also hidden by the necessary folk-theory of our everyday behavior which is based quite naturally on our conscious experience rather than on the less accessible components of our cognition.

In this article, we look at some aspects of polysemy which derive from the power of meaning potential. More specifically, we focus on aspects linked to the operation of conceptual blending, a major cognitive resource for creativity in many of its manifestations.

Polysemy is pervasive in language and appears in many forms. It is not just an accident of history or of synchrony, but rather an essential manifestation of the flexibility, adaptability, and richness in meaning potential that lie at the very heart of what a language is and what it is for. It is also a symptom (rather than a primitive component) of the way in which various cognitive operations allow for creativity at many levels.

The diversity and wide range of polysemy, and the wealth of theoretical implications associated with it, are richly attested in the present volume. In this article, we review a number of cases of polysemy associated with conceptual blending. A majority of these cases have been discussed in other contexts and for a variety of theoretical purposes. Rather than repeat the analyses in extenso, we will frequently refer the interested reader to the appropriate source for a more detailed treatment. In the sources, polysemy was seldom in itself the major focus. By bringing together a large number of cases in the present context, we hope to give an idea of the overall importance of blending in polysemy phenomena.

**An example of blending: the history of the world record in the mile.**

On 8 July 1999, the New York Times reported that Hicham el-Guerrouj had broken the record for the mile, with a time of 3:43.13. The illustration that accompanied the article, reproduced in Figure 1, shows a one-quarter mile racetrack with six figures running on it, representing el-Guerrouj in a race against the fastest milers from each decade since Roger Bannister broke the 4-minute barrier in 1954. el-Guerrouj is crossing the finish line as Bannister, trailing everyone, is still 120 yards back. This illustration prompts us to construct a conceptual packet that blends together structure from six separate input mental spaces, each with a one-mile race in which the record is broken by a runner. The blend places all six of the runners on a single racetrack, with a single beginning time.

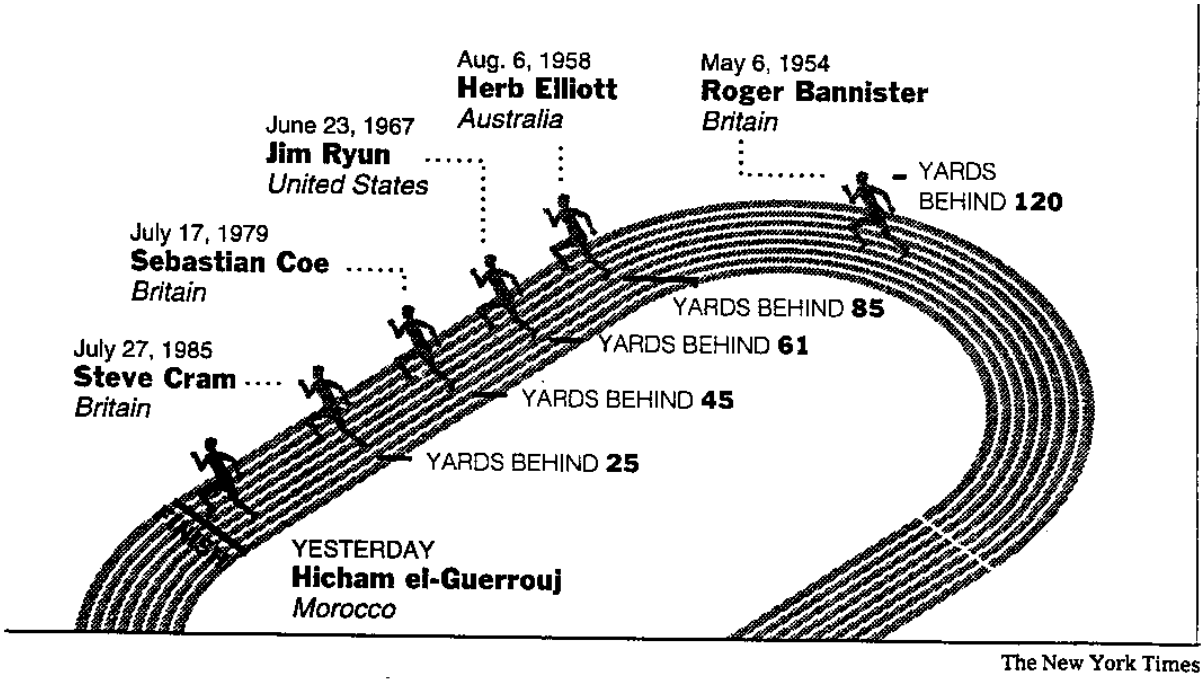


**Figure 1**

This blend has the familiar features of conceptual integration networks. There is a cross-space mapping connecting counterparts in each of the six spaces: winners, racetracks, finish lines, the mile distance, and so on. There is a generic space containing the structure and elements taken to apply to all these spaces, which constitute the fairly rich frame of running the mile and breaking the record. There is selective projection to the blend: from each of the six input spaces, we project to the blend the entire frame of running the mile, but not, for example, a specific location for the race, or any of the runners except the winner. Some counterparts projected to the blend are fused, such as the racetracks. Others, such as the record breakers, are not. There is emergent dynamic structure in the blend, namely, structure that cannot be found in any of the inputs: the blend is a simulation of a mythic race between giants of the sport, most of whom in fact never raced against each other. In this mythic race, el-Guerrouj "defeats" Bannister by 120 yards.

This blend is immediately intelligible and persuasive, but its construction is remarkably complicated. Projecting to the blend el-Guerrouj, his location at the finish line, and his winning time as he crosses the finish line does not tell us how to locate the other runners behind him. Naturally, their historical records do not indicate where they were at time 3:43.13. Their location on the track at this time must be calculated separately. In this case, the calculation is made by assuming that each runner ran his race at a uniform speed, despite the fact that this never happens. We see therefore that the input mental spaces to the blend, however useful, are fictions that do not correspond to the real situations that occurred. With these fictions in place, it is easy to compute the distance each runner has traveled at time 3:47.13 as the product of 1 mile and the ratio of el-Guerrouj's winning time to the runner's winning time. Subtracting the distance traveled from 1 mile yields the distance by which the runner trails el-Guerrouj. For example,

Bannister trails el Guerrouj by [1760 yards] - [(3:43.13/3:59.4)(1760 yards)] = 120 yards, rounding to the nearest yard.

To see further that there is nothing automatic or inevitable about this blend as an instrument for highlighting competition and record-breaking, we can compare it to the blend for the history of breaking the distance record for a fixed time in bicycling. In the standard one-hour competition in bicycling, the time of the performance is invariant, while the distance varies. So one breaks the record by going farther in one hour than anyone else has ever gone in one hour. Now, for this blend, we can project both the time and the distance for each of the previous record holders without having to perform any calculation. We simply place all the record-holders on the same track, each at the distance he had achieved after one hour. In fact, the blend for the milers looks like the blend for the bicyclists, but in the first case some aggressive manipulations were required to achieve the blend. In the bicycle competition, the contestants in the inputs and in the blend all do in fact stop after an identical period of time has elapsed, namely one hour. In the mile race, the contestants in the blend effectively stop competing to win the moment the winner crosses the finish line, even though their counterparts in the input spaces continue to compete to win, to finish the mile, and in fact to break the record.

In the rest of this article, we will show how various kinds of polysemy occur as a result of blending. We will argue that the following principles guide the development of polysemy and furthermore that most polysemy is invisible:

—1. Through selective projection, expressions applied to an input can be projected to apply to counterparts in the blend. In this way, blends harness existing words in order to express the new meanings that arise in the blend.

—2. Combinations of expressions from the inputs may be appropriate for picking out structure in the blend even though those combinations are inappropriate for the inputs. In consequence, grammatical but meaningless phrases can become grammatical and meaningful for the blend.

—3. Terminology that naturally applies to the blended space ends up, through connections in the integration network, to pick out meaning that it could not have been used to pick out if the blend had not been built.

—4. Blending provides a continuum for polysemy effects. Polysemy is an inevitable and routine outcome of blending, but it is only rarely noticed. The noticeability of polysemy is a function of the availability of certain frames either through defaults or through contexts or through culture.

The most obvious case of harnessing an existing word to express new meaning is category extension. Suppose we refer to a particular domestic relationship between two members of the same sex as a "same-sex marriage." As we have analyzed in Turner & Fauconnier 1995, this expression prompts us to create a conceptual blend that modifies the category "marriage." The expression "same-sex" comes from the mental space with the domestic relationship between the two adults of the same sex, while the word "marriage" comes from the mental space with the frame of conventional marriage. These expressions, attached to the inputs, are now used to evoke the blend, so "marriage" now picks out new meaning. Conceivably, this category modification could become so conventional for the entire linguistic community that one could without risk of appearing uncooperative refer to a same-sex marriage as simply a "marriage." By principle 1, "marriage" applies to an element in the blend that is quite different from its counterpart in the inputs. By principle 2, "The brides married each other at noon" is a combination of expressions from the inputs that is now appropriate for the blend but impossible for the inputs.

The expression "computer virus" is a parallel example, where the new meaning is produced by technological innovation rather than social change. A conceptual blending network links the inputs of computer processes and health and medicine and the blended space of computer viruses, vaccines, disinfectants, and so on. By principle 1, some vocabulary that applies to the inputs is projected to counterparts in the blend and so ends up expressing new meaning. In fact, in this case, the vocabulary has become conventional

for the entire linguistic community, so one can say "I got a virus at the office," meaning a computer virus. This example, unlike "same-sex marriage," is felt to be metaphorical, but the general blending mechanisms for creating polysemy are the same for "same-sex marriage" and "computer virus". In fact, we point out below that on a continuum of blending networks, some are felt to be completely literal, some absolutely metaphoric, and others at various stages in between. In this way, the mechanism for extending meaning in the case of "computer virus" is not metaphor per se, although metaphor is a collateral feature of this particular blending network.

"Complex numbers" is a category extension in mathematics, analyzed at length in Fauconnier & Turner 1998. One input space has the Euclidean plane and the other has real numbers. Before the invention of complex numbers, there was already a historical connection between the geometric line and the real numbers. Under blending, this connection was extended to involve the entire plane. In the blend, a complex number is both a number and a point. This point uniquely specifies a vector from the origin. By principle 1, vocabulary from the geometric input is applied to this number, which is now said to have a magnitude and an angle (or argument); and vocabulary from the number input is applied to the complex number in the blend, so we can now speak of operations like "addition" and "multiplication." Clearly, the meanings of "angle," "product," "number," and "sum"—in a way, the meanings of all terms in number theory—have been extended and deeply modified. Vocabulary that applies to the inputs has been projected to pick out counterparts in the blend, and consequently applies to the new meaning that has been developed in the blend. By principle 2, it becomes mathematically correct to say that "the angle of the product of two numbers is the sum of the angles of the two numbers." This combination of expressions from the inputs becomes appropriate for the blend even though it does not apply to the inputs. Also by principle 2, we can also refer to "the square root of negative one" for the blend, but not for the inputs.

In the case of "complex numbers," the meaning extension is absolutely precise and rigorous. It defines an extension of mathematics itself. We see that it is not through linguistic or psychological properties of terms like "number" and "sum" that polysemy occurs. It occurs as a byproduct of the conceptual change brought about by the blending network. Given the connections in the network, by principle 1, words like "number" or "angle" from the inputs come to apply to counterparts in the blend, producing a sharply different mathematical meaning. Mathematics loses none of its rigor by having words like "number" be polysemous. In some contexts, "number" refers to elements that do not have angles; in other contexts, "number" refers to elements that do have angles. "Number" retains all of its old meanings but acquires a new one to pick out elements in the complex number blend.

The examples we have considered are all traditionally considered to be category extension. For these cases, it is intuitively tempting to think that the category is extended by adding or deleting criterial features. But, as we have just seen with the example of complex numbers, category extension occurs by blending, which is not simply an operation of adding and deleting features. We now turn an example where it does not seem even intuitively that the blend arises by adding or deleting features.

Coulson 1997 analyzes "caffeine headache" as having two conventional readings, one in which the headache is caused by caffeine, the other in which the headache is caused by lack of caffeine. In this second case, we need an integration network involving a general schema for a headache and its cause, a present scenario in which the person with the headache has had no caffeine, and a counterfactual scenario in which someone has had caffeine and so has no headache. In the blend, the particular person with the headache has had no caffeine, the lack of caffeine is the cause of the headache, and the term "caffeine" has been projected from the all-important and desirable counterfactual scenario in which there is no headache. Although this looks and is intricate, it is an instance of a general pattern in which the integration network contains a fully activated

and highly important mental space that is counterfactual to the blend, and the simple term for the blend is taken from the counterfactual scenario. For example, a "nicotine fit" is a fit caused by lack of nicotine, where the term "nicotine" is taken from the counterfactual scenario in which the person does not have the fit. "Easy error," used in tennis to describe an error in making what should have been an easy shot, takes the modifier for the error from the counterfactual space. Perhaps most conventionally, a "money problem" activates a counterfactual space where there is money and no problem. In the blend, there is a problem, a causal relation, and a cause, namely, no money, but the term indicating the cause is taken from the counterfactual space in which there is money and therefore no problem.

We see that terms like "caffeine headache" have more than one meaning, being polysemous, because there is more than one blending possibility. The striking possibility pointed out by Coulson depends on the general availability of blending networks that have two highly active input spaces where one is directly counterfactual to the other in some crucial respect. For examples like "money problem" and "caffeine headache" that are licensed by such networks, it is very clear even at the intuitive level that the polysemy cannot be a result of adding and deleting semantic features attached to the two words. A caffeine headache situation, on the counterfactual reading, has no features of caffeine. In fact, its indispensable feature is a total absence of caffeine.

**Gradients of blending**

In this section, we focus on a single word, "father," to show how gradients of blending yield gradients of polysemy effects.

Consider an exceptionally simple limiting case in which a generic space in a conceptual integration network has two people and no relations. Take Input 1 in the network to be the *father-child* subframe of our more general kinship frame. And take

Input 2 to consist only of two people with no relation between them, e.g. *Paul* and *Sally*. A simple cross-space mapping can link *father* and Paul, connecting them to one of the people in the generic space, and *ego* and *Sally*, connecting them to the other person in the generic space. Projecting *father* and *Paul* to the blend and fusing them there and *ego* and *Sally* to the blend and fusing them there yields a very simple network, in which the structure in the blend is almost entirely obtained by composition of the input structures. It is essentially equivalent to a Fregean composition, expressed in logical notation by something like

(1) FATHER ( Paul, Sally )

It is also equivalent to filling in slots in a frame (father, ego) with fillers (Paul, Sally). In English, this blend would be triggered by sentences like *Paul is the father of Sally*. Another way to think about the resulting blend is to view it as instantiating the projection of the kinship frame in Input 1 onto the situation in Input 2, consisting of Paul and Sally.

These are very simple networks, and if they were the only form of integration ever observed, there would be scant justification for setting up a theory of conceptual blending. Simple framing (or its Fregean equivalent) would suffice.

But in fact these simple networks are only the beginning of a long gradient of increasing complexity. Crucially, the same word ("father" for example) can operate in all the networks of the gradient. Superficially, the result is that the word appears to have many different meanings. On the contrary, the word is always playing the same role in inviting us to use our potential to construct meanings through mechanisms like conceptual integration. To show this, we will work through a series of cases along this continuum all using the word "father." Consider:

(3) *Zeus was the father of Sarpedon. He watched from Mount Olympus as his mortal son met his fated death.*

This example points to the fact that there was more pattern completion and projection from inputs in the *Paul* and *Sally* case than we had realized. In "Paul is the father of Sally," we quietly projected from Input 1 a range of conventional knowledge, such as the mortality of the father and his normal paternal limitations. But it is a technical fact of blending that we can project equally from either input. So in the case of Sarpedon, the framing of the father's powers and limitations comes not this time from Input 1, but from Input 2.

Now consider:

(4) *Zeus is the father of Athena. She was born out of his head, fully clad in armor.*

Now, from the kinship space, we bring in general schemas of human progeration, such as the offspring's coming out of the body of a parent, but we bring in from our knowledge of divinity the possibility of unusual birth. We explicitly build in the blend, on the warrant of the second sentence, the particular kind of progeneration, which involves neither a mother nor an infant.

The divinity in Input 2 allows for many wonderful blends, each of which contains a "father" and a creative method of progeneration. For instance, Zeus is also the father of Aphrodite, this time in virtue of having castrated Chronos and cast his genitalia into the ocean foam, whence Aphrodite is born.

Of course, the Zeus cases cannot be attributed to figurative speech or analogy. Zeus is still felt to be quite the father of Sarpedon, Athena, and Aphrodite. Family structure is inferred along with sentiments and emotions that come with it.

Now consider "Joseph was the father of Jesus." In this case, in the blend, we do not project the usual structure of the father's role in procreation or the non-virginity of the

mother. But we can project family structure and family sentiments and emotions. Again, this use of "father" is not felt to be metaphoric or analogical.

Now consider a neighbor who takes care of Sally for the day while Paul is away, carrying out fatherly duties like making her lunch, accompanying her to school, reading bedtime stories. That neighbor can say to Sally: *I'm your father for today*. Like the Zeus and Joseph blends, some family structure and genealogy is projected. As in the Joseph blend (but not the Zeus blends), progeneration is not projected. Many of the typical aspects of the father-offspring relationship are projected (routines, taking care, responsibility, affection, protection, guidance, authority, and so forth). Compositionality is no longer at all an option to account for this case. Too many properties felt as central are missing. We have moved along the CIN continuum from the pole of "Fregean" networks. But clearly, we have not reached a point on the continuum that would be felt intuitively to be metaphorical. Fatherhood is not a metaphor for what the neighbor is doing. In fact, although some analogy has now contributed to the mapping, the function of this blend is stronger than just analogy between the neighbor's actions and a father's actions. The neighbor in this local context is really filling in the role of the father in relevant respects, not just doing something "similar" to what the father does. The flexibility of blending with selective projection and contextual elaboration allows for this intermediate kind of situation which doesn't fit a prototypical semantic or pragmatic characterization.

In the Zeus and Joseph cases, there are obvious principle 1 and principle 2 polysemy effects. By principle 1, "father" is projected to the blend from the *father-ego* input, but now picks out new meaning in the blend. By principle 2, we can now refer in general, across all contexts, to Zeus as "the parent of Athena," whereas, by contrast, Paul cannot be referred to in all contexts as "the parent of Sally." We can refer to birth as "leaving Zeus's head" in the way we normally refer to birth as "leaving the womb." Many similar expressions, each using words that already apply to the inputs, can be fashioned that pick out meaning only in the blend. We can also refer to Joseph as "Jesus's mortal

father," giving "mortal father" a contrastive rather than redundant meaning, which is likewise inappropriate for the *father-ego* input.

Consider further examples linked to *father*:

(4) a. *The Pope is the father of all Catholics.*

b. *The Pope is the father of the Catholic Church.*

c. *George Washington is the father of our country.*

They are further along the continuum. The first example still has people in both inputs. From the "kinship" input that provides the word "father," we project not progeneration at all but instead authority, size of the family, responsibility, leadership, social role. From the second input, we project specific properties of Catholicism.

The second example arguably projects the role of a child to a single social entity (*the Church*). The blend reflects a type of socio-cultural model, in which a social entity (church, nation, community) is the "child" of its leader. The word "father" is now felt to have a different meaning, but not a particularly metaphoric one.

With the George Washington sentence, we go a little bit further by highlighting the causality in time between the parent and child, and between the founder and the nation. This abstraction increases the perceived difference between the two inputs and their domains. The impression of metaphor is undoubtedly stronger. And that subjective impression reaches a higher point when the two domains are even more explicitly distinguished, as in *Newton is the father of physics.* Physics, as opposed to church and country, does not even stand in metonymic relation to people and groups of people. Yet Newton and Washington as adult men have all the criterial biological features of possible fathers plus some of the stereotypical social ones (authority, responsibility, ...). The conceptual integration networks directly bring in frame structure from both inputs.

Even more subjectively metaphorical are cases like Pound's *Fear, father of cruelty* (Turner 1987), where the two domains (emotions/qualities and people/kinship) have no

literal overlap at all, and the projected shared schema is correspondingly abstract (causality). And finally, Wordsworth's acrobatic metaphor *The Child is Father of the man* comes around almost full circle by using background knowledge (children grow into men) to create emergent structure in the blend giving a rich instantiation to the abstract generic causal structure which maps kinship to the human condition in an unorthodox way. The oddness of its counterpart connections and the extensive drawing on the frames of both inputs to create a new organizing frame for the blend help make Wordsworth's line feel figurative. But the syntax and mapping scheme of "The Child is Father of the man" are the same as the syntax and the mapping scheme of "Paul is the father of Sally."

The kinds of blends we have been talking about are often constructed using language. The reason language can prompt for blends that result in the same word's being used to pick out different meanings is that language does not represent meaning directly; it instead prompts for the construction of meaning in systematic fashion. All of the "father" examples are examples of the familiar XYZ-construction ("x is the y of z") whose purpose is to prompt for blends in systematic fashion, in ways that naturally result in polysemy.

This gradient of polysemy for the word "father" falls out naturally as a consequence of the facts that (1) "father" is in each case attached to one of the inputs; (2) blending as a conceptual operation applies to those inputs; and (3) by principles 1 and 2, "father" comes to pick out elements in the blend and to participate in phrases that pick out structure in the blend but not the inputs. Polysemy is in this view not a property of words but a byproduct of the operation of conceptual integration and the fact that words are attached to its inputs. The cognitive operation of conceptual blending, with its mechanisms of selective projection and elaboration, is not restricted to linguistic examples. But a mind that can do blending and that also knows language will inevitably develop polysemy for words through blending. If words show up in inputs, they can be projected like any other

element of an input. This will change their domain of application, unnoticeably in most cases, but noticeably when the emergent meaning in the blend to which they apply seems remarkably distant from the domain of the input from which they came. When we notice this distance, we call it by one of many names: extension, bleaching, analogy, metaphor, displacement. On our view, polysemy is a very common phenomenon, a standard byproduct of conceptual blending, but noticed only in a fraction of cases.

One way of thinking of language is as a system of prompts for integration. Since the conceptual structures to be integrated are many, each with ranges of words attached to them, an expression that prompts for their appropriate integration has to combine words, and language has to have forms to make these combinations possible. Obvious examples are predication ("This beach is safe") and compounding ("likely story," "possible solution," "eligible bachelor," "fake gun"). Consider, for example, "This beach is safe." A common way of describing the meaning of this sentence is to say that a particular property, SAFE, is predicated of an object, BEACH, by means of the words "safe" and "beach." On this view, "this house is safe" asks us to apply the same particular property, SAFE, to a different object, HOUSE. So, "safe" just has one meaning, SAFE. It would be straightforward to say "The beach is safe" when we want to let a child play there. And in that situation, it would be equally true that "The child is safe." But now we see the purported property SAFE attributed to the beach in "The beach is safe" and to the child in "The child is safe" would have to be two different properties, namely, on a first approximation, something like NOT POTENTIALLY HARMFUL as opposed to NOT LIKELY TO BE HARMED. By the same token, the word "safe" in the sentence "The beach is safe" would have to apply many different properties on the readings that the beach is legally protected from development, has a statistically low number of drownings, is not a site of violent crime, is owned in such a way that its ownership cannot be taken away from the owner, is a vacation spot that can be proposed without problem to someone (as

in a "safe bet"), and so on. In one sense, "safe" can mean many different things, but at the same time, there is no subjective apprehension of polysemy in these cases.

The details in these cases are actually surprising. They show that in order to make sense of "safe," we need to construct a counterfactual situation in which there is a victim, a location, instruments, possessions, and harm to the victim. In the case of the beach that is legally protected, the beach is the victim and the developers do harm to it. In the case of the beach with few drownings, the swimmers are victims and the beach (meaning by metonymy the water) does harm. In the case of the beach without crime, the vacationer is the victim and the criminals do harm. Alternatively, the owner of the beach can be the victim, or the person to whom we propose vacation spots can be the victim. We see that the noun that "safe" is applied to can point to many different roles in many different scenarios, not just the role of victim.

This leads, as shown elsewhere (Fauconnier & Turner 2002) to an analysis showing that, in order to do justice to the meaning of "safe," we must regard it not as applying a particular property but instead prompting for a particular kind of blend. The blend takes into account the frame of harm and the specifics of the situation referred to in the rest of the expression. It requires us to blend them to create a counterfactual scenario in which there is specific harm and to understand how the present situation is disanalogous to the specific counterfactual scenario. In fact, the linguistic expression singles out the disanalogous counterparts. For example, "The beach is safe," meaning that the child won't drown, singles out a counterfactual counterpart beach with riptides, deadly waves, and so on, and asks us to understand that the beach in the present situation is disanalogous to it. If "safe" does have a meaning, it is something like "perform a conceptual integration, finding on your own appropriate connections, given the other words in the expression and building a suitable counterfactual space on the basis of the harm scenario."

In fact, it's just like the caffeine example above that involved a counterfactual space of not having a headache and having had the caffeine, and understanding how that

counterfactual space is disanalogous to the present situation. Here, too, the linguistic expression selects "caffeine" and "headache" in order to identify the disanalogous counterparts.

Now consider a word like "likely." Sweetser (1999) considers the case in which "likely candidate" means not someone likely to become a candidate or succeed as a candidate but, e.g., a candidate likely to grant an interview. As she writes, "So long as we can think up a scenario relative to the candidate in question, and evaluate that scenario for likelihood, *likely candidate* can mean the candidate who figures in the scenario we have labeled as likely." On her analysis, conceiving of such a scenario and evaluating it consists of finding a blend of the frame for likelihood, conceived of as probability of occurrence in a sequence, and the frame for candidate. Like "safe" above, "likely" prompts for a blend. Sweetser's examples make the point clearly that the scenarios necessary to do the appropriate blending may or may not be connected at all to the particular lexical items (e.g., "candidate"), as we see, for example, in the case where "possible textbook" refers to a textbook that might possibly be chosen as the one to be used in a college course. Just as the different meanings of "safe" may go unnoticed, so the different meanings of "possible" and "likely" may go unnoticed. But from a logical standpoint, a "possible textbook" in the sense of one that may be adopted is not the same as a "possible textbook" in the sense of one that might exist, or might be written, or a trade book that could double as a textbook. As before, in the cases of "likely" and "possible," blending opens the possibility of extensive polysemy in the logical sense that may go unnoticed. This is no accident, since the function of these linguistic forms, like the linguistic forms "Adj-Noun" and "Noun-Noun," is to prompt for blending.

## Conclusion: The Purpose of Linguistic Form

Human beings are confronted by a fundamental problem: conceptual systems are vast and rich and open-ended, while linguistic systems, impressive though they be, are relatively quite thin. How can a linguistic system be used to convey the products of conceptual systems, and how can these products find expression in language, given the stark mismatch in their respective infinities? If forms of language had to represent complete meanings, language could communicate very little. The evolutionary solution to this problem is to have systems of forms prompt for the construction of meanings that go far beyond anything like the form itself. The "of" found in a range of examples like "Paul is the father of Sally," "father of cruelty," "father of the Catholic Church," "Vanity is the quicksand of reason," "Wit is the salt of conversation," and so on does not single out any particular blend or even any particular projection; it only prompts for finding a way to construct a conceptual network that will have a relevant meaning. What we have to do to construct that network is nowhere represented in the linguistic structure. The single word "of" is thus associated with an open infinity of mappings. Of course, this infinity of mappings is anything but arbitrary. It is constrained itself by the requirements on conceptual integration networks. Different grammatical forms prompt different infinities of conceptual mappings.

Because linguistic expressions prompt for meanings rather than represent meanings, linguistic systems do not have to be, and in fact cannot be, analogues of much richer conceptual systems. Prompting for meaning construction is a job they can do; representing meanings is not. As we have shown in this article, a byproduct of constructing conceptual integration networks will be massive, though often unrecognized, polysemy.

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