



Metaphors for explaining – a short guide

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When speaking about abstract or difficult issues – such as explaining or explainable artificial intelligence – people deliberately or unintentionally use metaphors. These metaphors may shape how speakers think about the issue and how they act. For instance, metaphors of explanations may influence how scientists design explaining machines. This article is intended to draw attention to metaphors and their potential consequences. We will also look at specific metaphors for explaining and make some suggestions as to which metaphors match or do not match the understanding of explaining within the Collaborative Research Center “Constructing Explainability” and what to bear in mind when using metaphors.

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As a guideline, this text is very concise. For readers who would prefer more information about the evidence we used to come up with these reflections and recommendations, we have included references and further explanations in the endnotes.

Metaphor: What and why?

Metaphors are omnipresent in human talking and writing and can influence what and how we think about topics.¹ Researchers have therefore worried about problematic or ill-fitting metaphors in political and societal discourse. Prominent examples are global warming, migration, and diseases. The common metaphor of a greenhouse has the mistaken implication that we might open a window to reduce heat.² Migration metaphors such as flood and wave compare human-made problems to the forces of nature and thus hide their real causes, and the idea of fighting a fatal illness ascribes an often unrealistic responsibility to the patient. All these

metaphors highlight important aspects of the phenomenon they refer to, but at the same time hide others, such as the human responsibility for the causes of migration. Some researchers have therefore tried to advise politicians or practitioners in their use of metaphors.³

What makes the problem of ill-fitting metaphors even more difficult is that metaphors are often used unintentionally, and this in several possible ways: Speakers may choose and use metaphors without any particular intention (simply because they are common in a certain situation) and they may not be aware of the implications of the metaphor even when they have deliberately chosen it. Being aware of metaphors is important for at least two reasons. Firstly, because they may deliberately or unintentionally influence how humans think about a topic – what is focussed, what is misrepresented or even hidden –, and secondly because producing or understanding a metaphor mostly isn't reflected upon or even noticed. The aim of this short guide is to raise awareness of this influence.

A metaphor in the understanding of modern theories is not an ornamental device to make a text more appealing. Metaphors are devices to help people understand issues. Metaphors allow us to understand an abstract issue in terms of a more concrete and experience-related concept. As a short definition, any word that is not used with its literal meaning is a metaphor. For instance, the abstract concept of privilege may be metaphorically described as playing a game at the easiest level.⁴ Contemplating what it means to be playing a game at the easiest level can then be used to understand privilege, for example, that opposed to others, some people don't have to make a lot of effort to reach goals or that success comes to them more easily and regularly than to others.

Metaphors can be used explicitly by flagging the metaphor with a word such as “like” or “in a way”. An example is “a privilege is, in a way, playing a game at the easiest level” or “understanding something is like a light bulb going on”. These are direct metaphors. However, in many cases, metaphors are used indirectly, that is, without marking that one is comparing something with another thing. For instance, looking back at the last exam preparation, we might say that we “were continuously struggling to grasp something”. In this case, learning would be compared to handling objects even without a linguistic comparison.

The main tenet of modern metaphor theories is that even very common and unobtrusive metaphors, such as GRASPING or ENLIGHTENING for learning and understanding, shape how we think about the topic they are used for. If someone conceives learning as enlightening and struggles with modern grammar theories, they might wait for the “light bulb moment” to occur instead of taking action to talk to others about grammar. And if someone conceives learning as grasping, they might also inadvertently think that the grammar theories mentioned earlier are a relatively small, well-defined object – like an article you pick up in your hand – and miss that theories are also ways of seeing something.

Metaphorically used words have a basic meaning, at least for a normal speaker at a certain time. This basic meaning is often experience-related or bodily, concrete, specific, and human-oriented.⁵ The basic meaning of grasping may be defined as “to take and hold something or someone very tightly”, and the basic meaning of illuminating is “to start to have more colour or light; to give something more colour or light”.⁶ Metaphors derive their function from their basic meaning.

The idea of a common or basic understanding of a metaphor is widespread in metaphor theory and it helps think about the understanding that a metaphor entails, but it also poses problems. The idea of a basic embodied meaning, for example, takes certain bodies as given. To understand knowledge metaphorically as seeing, as the aforementioned light bulb and the metaphor of illuminating does (common metaphors for knowledge in Western thinking) presupposes the seeing body. Metaphorical phrasings such as a “lame excuse” devalue disabled bodies. It is necessary to access the basic meaning of a metaphor from one’s own linguistic understanding and embodiment, but it must also be critically reflected against the background of certain groups and cultures and their norms and values. This is also the case as metaphors may not only reflect but also reinforce cultural norms.

How can metaphors support (or act against) a specific concept of explaining?

Metaphors work through their structure or implications. If a student speaks of learning as an UPTAKE of information, they will understand the learning content as pre-existing and their own role as relatively passive. And if a teacher thinks of explaining as feeding BITE BY BITE, they will similarly not think highly of the learner’s contribution towards this process. These are *structural implications* of metaphors, and they are what we must be aware of when we use metaphors because they may shape how people think of a certain issue and accordingly plan their actions – and act, and thereby influence others – a possibly self-reinforcing circle.

Most of these structural implications lie in the *highlighting* of elements, but there are also implications of *hiding* elements. For instance, many knowledge metaphors in Western thinking hide that knowledge can be meaningfully seen as fluid and changing instead of object-like and fixed. Identifying the hidden elements requires taking a step back from the metaphor and trying to reflect on it in the light of cultural or linguistic and other presuppositions. Compared to that, the highlighted elements are easier to identify.

In the following, we present metaphors for explaining that support the co-constructive notion of explaining that the TRR has put forward. We will also discuss a few frequent metaphors for explaining that rather act against this stance.

Metaphors matching the TRR's understanding of explaining

In the present context, metaphors are considered helpful if they support the TRR's co-constructive notion of explaining, that is if they

- emphasize the active roles of explainer and addressee
- underline that something is constructed and negotiated in an explanation
- indicate processes of (possibly even mutual) scaffolding and monitoring
- and therefore, indicate a temporally extended, iterative process including different subprocesses

BUILDING OR CONSTRUCTING: Building is a rather common metaphor that is used in various domains (for instance people build families or relationships). The basic meaning of building is “to make a building or larger structure by putting its parts together”.^{vii} What is helpful about this metaphor is that something new is constructed. Also, building is a temporally extended and iterative process with different parts. The person is clearly active and agentic. These elements are salient in the TRR's understanding of explaining. What building does not necessarily imply is collaboration and negotiation. This is also why it does not include mutual scaffolding and monitoring. Monitoring the process is again characteristic of building. Overall, the building metaphor highlights the constructive and agentic nature of explaining but seems to hide the addressee of an explanation and their role in explaining.

	Building	Putting a puzzle together	Cooking a meal together	Couple dance	Playing shuttlecock
Temporally extended	X	X	X	X	X
Iterative	X	X	X	X	X
Different subprocesses	X	?	X	X	X
Active explainer	X	X	X	X	X
Active addressee	?	?	X	X	X
Sth is constructed	X	X	X	-	-
Sth is negotiated	-	-	?	?	-
Scaffolding	-	-	?	X	-
Scaffolding mutual	-	-	?	?	-
Monitoring	X	?	X	X	X
Monitoring mutual	-	-	X	X	X

PUTTING TOGETHER, e.g. a puzzle. The basic meaning of putting is “to move something to a particular position, especially using your hands”.⁸ Similar to building, this is a temporally extended activity in which something is constructed by repeating the same process. People may collaborate in putting something together, but this is, again, no necessary element. For this reason, processes of mutual scaffolding and monitoring are not implied. Also, negotiation is missing from the entailments. Overall, putting together is quite similar as a metaphor to building with the same highlighting and hiding aspects.

COOKING A MEAL TOGETHER. Here, the basic meaning (“to prepare food and heat it so that it is ready to eat”) is not very helpful. The helpful implications or entailments of this compound metaphor are that it refers to an extended and complex activity which produces something. The word “together” implies that at least two persons are involved. Even negotiating (and therefore, mutual scaffolding and monitoring) could be implied by the metaphor if one thinks of agreeing upon how certain things should be prepared, who does what and so on.

COUPLE DANCING. The basic meaning of dancing would be “to move your feet and your body in a pattern of movements that follows the sound of music” or “to perform a particular type of dance”. Because of the compound, this is not sufficient to understand the entailments of the metaphor. What the metaphor depicts is an extended activity that presupposes the coordination and thus, in a way, negotiation between two persons. These persons are quite alike, but – in the classical European couple dance – one of them leads. Also, dancing would imply mutual monitoring and scaffolding at least by one of the persons. However, it is not clear what is produced by dancing – in contrast to explaining, which can and should produce lasting understanding, there is no product in dancing. The focus is on the process, not the product. (Note also that the couple-dancing metaphor implies another, less apt metaphor, explaining is LEADING).

PLAYING SHUTTLECOCK. The basic meaning of playing seems to be difficult to define (the dictionary gives “to take part in “sports/game”, “to make music/sound”, “to have part in play etc.” and “when children have fun” which is almost synonymous to play). We suggest to define the basic meaning as “spending time on an enjoyable activity”. Again, we have a compound metaphor which shifts the meaning of the verb in isolation. Playing shuttlecock highlights the interactive and iterative nature of the activity. Players will monitor each other closely and respond to the other’s moves. What is hidden by the metaphor is that explaining requires at least some negotiation and that explanations typically produce something lasting. Also, the shuttlecock-playing metaphor implies that there can only be one winner which is out of place for explaining.

None of these metaphors is a perfect match for the TRR’s understanding of explaining. (In fact, we are still trying to come up with a metaphor that has a match in all elements.) Temporal extension, iterativity, activity of the explainer and different sub-processes or components are present and rather salient in almost all metaphors. Only some of them highlight the active role of the addressee. Only a few metaphors entail the production of something. Reciprocal monitoring and scaffolding are rare. Clear negotiation is lacking in all metaphors.

This lack can possibly be overcome by *extending the metaphor*. We have already used a metaphor extension here by turning “cooking a meal” into “cooking a meal together”.

Metaphors not matching the TRR's understanding of explaining

One frequent metaphor for explaining involves the domain of GIVING. For instance, we often say that we give somebody information or an explanation. To understand the implications of this very common wording, we again refer to the basic meaning of the action of giving (“to put something in someone’s hand or to pass something to someone”). Giving, thus, is an action in which an object is handed over from one person to another. The action is short, consisting of only one “turn”. The receiver is hardly involved in the action. The object is not changed by the action, by contrast, it pre-exists it. Thus, only one element, the active explainer, matches the TRR’s understanding of explaining, all other elements are hidden.

Another frequent metaphor is ILLUMINATING. The metaphor refers to the domain of light. In Western thinking, light and knowledge often go together (think for instance of the age of enlightenment and its focus on education). Illuminating is defined as “to start to have more colour or light; to give something more colour or light”. It may refer to an activity, but also to a change of state; in both cases, it happens instantaneously. Only one person is involved, and the illuminated object is not changed. Only the second definition presupposes an active person. The activity might or might not be temporally extended, but it does not imply subprocesses, the addressee is missing, and nothing is negotiated.

The final example is uncovering. Its basic meaning is “to take a cover or a lid off something”. Its features match the illuminating metaphor except for temporal extension which may be present in illuminating but is absent in uncovering.

	Giving	Illuminating	Uncovering
Temporally extended	-	?	-
Iterative	-	-	-
Different subprocesses	-	-	-
Active explainer	X	X	X
Active addressee	(x)	-	-
Sth is constructed	-	-	-
Sth is negotiated	-	-	-
Scaffolding	-	-	-
Scaffolding mutual	-	-	-
Monitoring	-	-	-
Monitoring mutual	-	-	-

All these metaphors – as well as many others – miss the core elements of the TRR’s understanding of metaphor.

Using a metaphor

As indicated above, even a very apt metaphor may not be a good choice in a certain situation. There are different reasons why people may understand a metaphor differently than the speaker intended, and they may even resist or reject it.⁹ As mentioned above, within TRR, the core elements of explaining are the activity of explainer and addressee, construction and negotiation, scaffolding and monitoring, and a temporally extended, iterative activity with different subprocesses.

Take “explaining is a couple dance” as an example. As mentioned above, this metaphor highlights many elements of the TRR’s understanding of explaining as co-construction: two persons are almost symmetrically involved in an explanation and they may silently negotiate their dance which consists of many turns – elements of explaining that are often missed by metaphors of explaining. How then could this metaphor – apart from its obvious lack of construction - entail problems?

Firstly, the interlocutor would have to be familiar with all these aspects of couple dancing. People who attended a dance school in their youth to learn the classic couple dances, as has been common in many German milieus up to now, will perhaps be familiar with them. But can such an experience be assumed for everyone? Such cultural experiences are not common in all milieus and might be unknown to many immigrants or do not match their own culture- or group-related experiences.

Secondly, interlocutors must not associate the source domain with other experiences than those that the person using the metaphor intends to evoke. Anyone who mainly associates couple dancing with the experience of stepping on each other’s toes can’t do much with the metaphor.

Furthermore, the couple-dancing metaphor is rather unusual.¹⁰ This has an advantage and a cost: Unusual metaphors draw attention – which might be appropriate if one wants readers to ponder about the implication of a metaphor (“Oh yes, my students are a very important partner of my explaining!”), even if they do not work out exactly as intended (“Well, explanations often go round and round and round, tedious stuff turning everybody dizzy”). However, it may also draw attention away from the content at stake to the metaphor as such (“Why such an odd comparison?”).

As a rule, one should prefer common metaphors if one does not want to point listeners or readers to the metaphor as such. In the case of explaining in the TRR’s understanding, this is at odds with the fact that there seems to be no common metaphor that captures the full structure of the co-constructive nature of explaining. Some problems are not easily solved!

Endnotes (explanations and references)

1 About 6.6% of words in conversation are metaphorical, according to an estimate by Steen et al. (2010), and even more in news, fiction or academic discourse. Steen, Gerard J., Dorst, Aletta G., Herrmann, J. Berenike, Kaal, Anna A., Krennmayr, Tina, & Pasma, Tryntje (2010). *A method for linguistic metaphor identification: From MIP to MIPVU*. John Benjamins.

2 A claim made, for instance, by Flusberg, Stephen J., Matlock, Teenie and Thibodeau, Paul H. (2017) Metaphors for the war (or race) against climate change. *Environmental Communication*, 11(6), 769-783, <https://doi.org.10.1080/17524032.2017.1289111>

3 Most prominently: Lakoff, George and Wehling, Elisabeth (2012), *The Little Blue Book: The Essential Guide to Thinking and Talking Democratic* Free Press and Wehling, Elisabeth (2018) *Politisches Framing Wie eine Nation sich ihr Denken einredet - und daraus Politik macht* Ullstein. Also Flusberg, Stephen J. & Thibodeau, Paul H. (2023) "Why is mother earth on life support? Metaphors in environmental discourse". In Topic: Conceptual Foundations of Sustainability, ed. By Barbara C. Malt, and Majid, Asifa, *Topics in Cognitive Science*, 15(3), 329-607 and Flusberg, Stephen J., Matlock, Teenie and Thibodeau, Paul H. (2017) Metaphors for the war (or race) against climate change. *Environmental Communication*, 11(6), 769-783, <https://doi.org.10.1080/17524032.2017.1289111>

4 We take this example from John Scalzi (2012), *Straight White Male: The Lowest Difficulty Setting There Is*, published here <https://whatever.scalzi.com/2012/05/15/straight-white-male-the-lowest-difficulty-setting-there-is/>; and John Scalzi (2022), "Straight White Male: The Lowest Difficulty Setting," *Ten Years On*, published here: <https://whatever.scalzi.com/2022/05/18/straight-white-male-the-lowest-difficulty-setting-ten-years-on/>

5 Researchers have struggled with pinning down such basic meanings, and there is not clear agreement on its definition or source. See, for instance Steen et al. (2010, p. 35) on an operational definition, or Lakoff 1993 on a more philosophical one. For simplicity, we take the *Macmillan English Dictionary for Advanced Learners* from 2007 as a reference. Steen, Gerard J., Dorst, Aletta G., Herrmann, J. Berenike, Kaal, Anna A., Krennmayr, Tina, & Pasma, Tryntje (2010). *A method for linguistic metaphor identification: From MIP to MIPVU*. John Benjamins. Lakoff, George (1993). The contemporary theory of metaphor. In Ortony, Andrew (Ed.), *Metaphor and thought* (pp. 202–251). Cambridge University Press.

6 These basic meanings come from the *Macmillan English Dictionary for Advanced Learners* (2007). Choosing such a dictionary is not trivial, and it is also important to ask yourself whether there is such a thing as a normal speaker.

7 Again, we derive these basic meanings from the *Macmillan English Dictionary for Advanced Learners* from 2007.

8 The metaphor of putting is part of the basic meaning of building.

9 A well-known example of the latter case is the resistance to understanding illness or recovery as a war, as expressed in common phrases such as “having lost the battle against cancer”. See Susan Sontag (1978), *Illness as metaphor*. New York: Farrar, Strauss & Giroux.

10 We came upon it only once in a response of a student participant to complete the prompt “Explaining is like ...”.

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