The Syntax of Metaphorical Semantic Roles

George Lakoff
University of California at Berkeley

Introduction

The topic of this paper arose several years ago during a conversation with Chuck Fillmore, whose theory of case grammar brought the study of semantic roles into generative linguistics. When I asked Fillmore what he thought the main problem with case grammar had been, he replied that it was the proliferation of semantic roles, or what were then called 'deep cases.' He gave the example of the word *through*, which expresses the PATH role in sentences like

-I drove through the tunnel.

But in sentences like

-I got my job through my uncle.

through has to have a different semantic role, since "my uncle" does not define a spatial path. This was a problem for the following reason: one of the main attractions of the theory of semantic roles is its use of a very small set of such roles, like Agent, Patient, Source, Path, Goal, and so on. But, Fillmore observed, as one looks at more and more examples, the number of semantic roles seems to proliferate, despite the fact the grammatical inventory for expressing them is relatively small.

I would like to suggest that the proliferation problem arises only because of the use of truth conditional semantics. In a cognitive semantics, where abstract concepts are characterized via metaphor, there should be no proliferation of roles. For example, DESTINATION in English can be expressed as the object of the preposition *to*, as in the sentence

-He came to me.

Now consider sentences like

-That idea came to me.

and

-I thought of that idea.

These sentences have essentially the same truth conditions. If semantic role theory is limited by truth conditional semantics, then a problem arises: why should the THINKER be expressed a subject in one sentence and the object of the preposition *to* in the other? One could state an ad hoc rule that EXPERIENCERS can be expressed by *to*. But there is an independently motivated explanation in which no such ad hoc rule is necessary. The sentence, *That idea came to me*, is understood in terms of the common conventional metaphor that thoughts are external objects that enter the head from the outside. We will refer to this as the THOUGHTS ARE EXTERNAL OBJECTS metaphor. Since the THINKER is the

metaphorical DESTINATION in this metaphor, it is expressed in the same way as a DESTINATION role in the source domain.

Because of the rapid and extensive development of the theory of metaphorical semantics, it has begun to be possible to offer explanations of this sort for how concepts are expressed in grammar. As more metaphorical explanations for syntactic phenomena become available, the proliferation problem for semantic roles disappears.

Before going on to other examples, let us consider what basic findings in the theory of metaphor would be employed in such explanations:

Basic Results in the Theory of Metaphor

-Metaphor is the basic mechanism by which abstract concepts are understood in terms of more concrete concepts.

-Metaphors are conceptual mappings from structures in one conceptual domain (the source domain) to structures in another domain (the target domain).

-Each such mapping applies to a source domain ontology and maps it onto a target domain ontology. By virtue of such ontological mappings, knowledge about the source domain is mapped onto knowledge about the target domain.

-It is common for aspects of target domain structure to created by metaphor.

-There are a great many conventional metaphors, that is, mappings in our conceptual system that are entrenched, common in the culture, unconscious, automatic, and effortless.

-Metaphorical mappings are constrained by:

> The Topological Invariance Hypothesis: Metaphors preserve image-schematic structure.

Accordingly, containers get mapped onto containers, paths onto paths, forces onto forces, links onto links, contact onto contact, and so. Image-schemas are kinesthetic, analog structures that embody spatial logics. Metaphors thus map spatial inference pattersn onto abstract inference patterns. It is hypothesized that this is what makes abstract reason possible.

-There are four types of metaphorical mappings:

> Basic metaphors: These have fixed source and target domains and fixed ontologies. Each maps an entire source domain structure onto a target domain structure. They are conventionalized.

> Image metaphors: These are isolated one-shot mappings from a single conventionalized mental image onto another conventionalized mental image.

> Image-schema metaphors: These apply to individual source domain image-schemas.

Generic-level metaphors: These place constraints on the source and target domains, but within these constraints allow for both variable sources and target domains and variable ontologies.

All of these are constrained by topological invariance.

-Metaphorical mappings exist in the conceptual system independent of their linguistic expressions. Their function is to permit the understanding of abstract concepts in terms of concrete concepts, and thereby to characterize abstract reason.

-All of the above is part of conceptual structure. Linguistic expressions of conceptual metaphors come into the picture in the following way:

Default Condition: In default cases, if a conventional linguistic expression E expresses a source domain concept, then E also expresses the corresponding target domain concept.

There are of course nondefault cases where there is no linguistic expression of one or more aspects of a metaphoric mapping.

-Evidence for metaphor structure comes from two sources: metaphorical inference patterns and generalizations concerning polysemy.

-Poetic and other novel metaphors arise from conventional metaphorical mappings by three basic mechanisms: elaboration, extension, and composition.

Extension is the mapping of additional arguments from the souce domain schema.

Elaboration is the fleshing out of a conventionally mapped argument place beyond what is specified in the conventional metaphor.

Composition is the overlapping of two or more metaphorical mappings within a single clause or phrase.

These aspects of the theory of metaphor are justified on the basis of evidence independent of semantic role phenomena. To date, between 100 and 200 general conventionalized metaphors have been analysed to some extent in the literature, and each of them implictly characterizes metaphorical semantic roles. Thus, in the sentence *That idea came to me,* "me" is a metaphorical DESTINA-TION. The fact that it is expressed with "to" is a consequence of the Default Condition. In other words,

In the default case, it is the source domain semantic role that determines how a target domain role is expressed.

Because this simple condition is embedded in a complex system, there are many complexities that arise. Let us return to the THOUGHTS ARE EXTERNAL OBJECTS metaphor. In *That idea came to me,* both the preposition "to" and the verb "come" are source domain expressions that arise by the Default Condition. However, in expressions like *It appears to me . . ., It seems to me . . .,* and *It occurred to me . . .,* ideas are also seen as coming to one from the outside. In

these cases too, the THINKER is a metaphorical DESTINATION and so is coded with "to". But in such cases. the Default Condition applies only to the semantic roles, not to the verbs; "appear", "seem", and "occur" are not verbs of motion. They code the target domain, not the source domain. In such cases. it is the semantic roles, not the lexical items, that allow us to see the metaphor at work.

Further subtleties can be illustrated by the THOUGHTS ARE EXTERNAL OBJECTS metaphor. Consider cases like:

-The thought just struck me that the year is almost over.
-It just hit me that Harriet is arriving next week.

If thoughts are external objects that can come to you through the air, it is possible that they could arrive with force. catch you unawares, and hit you. This variant of the thoughts are external objects metaphor is expressed by verbs like "hit" and "strike", which. in the physical domain, profile not DESTINATION but rather the forceful effect. that is, the PATIENT role. Here the physical effect in the source domain is mapped onto the mental effect in the target domain, and the THINKER is seen metaphorically as a PATIENT and hence expressed as a direct object. The point here is that the same general conceptual metaphor, THOUGHTS ARE EXTERNAL OBJECTS can have variations which profile different source domain roles. The Default Condition applies here as well, but yields a different result with the same metaphor because a different variant of the metaphor occurs.

Let us now turn to complexities concerning omitted arguments of predicates. The first complexity involves what Langacker has referred to as the setting/participant distinction: participants are involved in events, while settings are not. Thus, in

-John died in New York.

"John" is a participant, while "in New York" is a setting. It is important to distinguish the participant-setting distinction from the figure-ground distinction. Thus, in

-On Main Street, a drunk was embracing a lampost.

"a drunk" is a figure with "a lampost" as its ground; both are participants in the act of embracing, and "on Main Street" is the setting for that act. Similarly, in

-John drove to New York.

"John" is a participant in the act of driving; "New York", which is not a participant in the driving, is a setting relative to which the driving occurs.

Michael Chandler has observed (p.c.) that one of the principles that governs omitted argument cases is

The Setting Principle: Settings are omissible.

Thus. in the following examples. "here" and "to me" are omissible:

-Harry is arriving here at noon.
-Harry is arriving at noon.

-Rover came to me when I called him.
-Rover came when I called him.

As it happens, the setting-participant distinction is not preserved by metaphorical mappings. Source-domain settings may be mapped onto target domain participants and vice versa.

The follow question now arises: Suppose a metaphor does not preserve the setting-participant distinction. Say a source domain setting is mapped onto a target domain participant. How does the setting omissibility principle apply? Is is the source domain or the target domain that controls omissibility, or both?

The answer is that it is the target domain that controls setting omissibility. Let us consider some examples. Start with the THOUGHTS ARE EXTERNAL OBJECTS metaphor. Though DESTINATION is omissible with source domain "come", as in *Rover came*, it is not omissible in the target domain of mental entities.

-It came to me that I could solve the problem that way.
-*It came that I could solve the problem that way.

The reason is this: In the physical domain, destinations are settings; they do not participate in the action of moving. However, in the target domain, thinkers are participants; they do participate in the action of thinking. Since they are not target domain settings, they are not omissible.

Let us now consider the verb "arrive", which, in the spatial domain has a setting as an omissible argument place (as in *He's arriving at noon*. Will metaphorical senses of "arrive" have that argument place omissible or not? As one might expect, it depends on the metaphor and whether the metaphor maps that source domain setting onto a target domain setting. Let us consider two different metaphors, where the first maps the source domain setting onto a particpant and the second maps maps it onto a setting.

The first metaphor is THINKING IS MOVING. Examples include *reach a conclusion, be led to a conclusion, be lost, be going in circles*, and so on. We can say, using this metaphorical understanding of thinking,

-He arrived at that conclusion.

but not

-*He arrived.

The reason is that, in the target domain of thinking, thoughts are participants,

that is, they are part of the action of thinking, not merely a setting for the action. Thus, it is not merely the verb "arrive" that works this way, as the following examples show:

-He was led to that conclusion.
-*He was led.

Now consider the common metaphorical understanding of a career, which is actually a composite of two metaphors, STATUS IS UP and A CAREER IS A JOURNEY which combine to form a view of a career as a journey with vertical movement with a peak as destination. Examples include *He's climbing the ladder, he made it to the top, he's over the hill,* and so on. If we are understanding careers in terms of this metaphor, we can say

-He's arrived at the top.

or simply

-He's arrived.

Here the argument is omissible because it is a setting, not a participant, in the target domain. That is, the peak of one's career is understood as a location; it is not part of the action you perform to get there.

On the basis of this phenomenon, it is clear that the source domain alone does not control how semantic roles will be expressed syntactically. In the case of setting omissibility, it is the target domain that matters. This might lead one to speculate as to whether metaphor is irrelevant to all omissibility phenomena. The answer is no. The Setting Omissibility Condition is not the only omissibility condition; there is also:

The Default Object Omissibility Condition: Default direct objects are omissible.

This is the condition responsible for the omitted objects in *John ate* and *Harry drinks*; the default cases for direct objects can be omitted and still understood.

To see how this condition works in metaphorical cases, consider the verb *follow*. *Follow* can take two kinds of direct objects: leaders and paths. As it turns out, leaders are default direct objects for *follow*, and are omissible: Hence, we can have both

-I led and he followed me.
and
-I led and he followed.

Although *follow* may also have a path as direct object, it is the leader, not the path, that is the omissible default:

-The path led to the next village and I followed it.

-*The path led to the next village and I followed.

To test the effect of metaphor, let us take two metaphors that apply to *follow*, one of which maps both leaders and paths into the target domain and the other of which maps only paths, but not leaders.

The THOUGHT IS MOTION metaphor includes in its mapping someone who can lead you along a complex line of reasoning. Because of the Default Object Condition,

-Do you follow me?

can be expressed by

-Do you follow?

Here the metaphorical leader can be omitted. But a metaphporical path cannot:

-This article has a long, complex line of reasoning, but I can't follow it.

-*This article has a long, complex line of reasoning, but I can't follow.

A second metaphor that applies to *follow* is PURPOSES ARE DESTINATIONS, where the means are paths, difficulties are impediments to travel, and where someone may help by giving directions that specify a metaphorical path. The metaphor, however, does not include in the mapping a leader who reaches the destination before you do; in achieving a purpose, you have to do it yourself. As predicted, the object of *follow* is not omissibile when this metaphor applies to it. Thus, one can say

-He gave me directions and I followed them.
but not
-*He gave me directions and I followed.

Because there is no leader in this metaphor, the default direct object condition cannot be met with this particular metaphorical sense of *follow*.

What this case shows is that metaphors are important in an overall account of argument omissibility. Here, the source domain determines the default, and target domain argument places are omissible only if they are mappings of source domain defaults.

Another complexity in understanding the working of semantic roles concerns the interaction of metaphor and metonymy. Consider a sentence like

-Let's shoot for Monday.

This is an instance of a very common metaphor in which ACHIEVING A PURPOSE

IS HITTING A TARGET. Thus you can *aim to do something, take a shot at some-thing, miss it, be right on the mark, come close, be way off* and even *call the shots.* The "shoot for" in this sentence is understood, via this metaphor, as referring to an attempt to achieve some purpose. But why can "Monday" be the object of "shoot for"? The reason is that there is a common generalized meto-nymy in which TIMES STAND FOR EVENTS OCCURRING AT THOSE TIMES. Exam-ples include *Last night was fun, The day before Christmas is crazy, Monday mornings always go wrong,* and so on. Here "Monday"is standing for a contextu-ally determined event occurring on Monday. For example, it might mean

-Let's shoot for a meeting on Monday.

Thus, it would be a mistake to assume that "Monday" in "Let's shoot for Mon-day" bears a special semantic role. All one needs to account for the facts in this case are the independently motivated metaphor and the metonymy, plus an account of the semantic roles in the source domain of the metaphor.

The hundreds of conventionalized metaphors and metonymies in ordinary English provide nasty problems for truth-conditional semantic role theorists. Not surprisingly, those problems have not been faced squarely by those who want to maintain a truth-conditonal semantics. As a final example, let us consider two common general conventional metaphors: SEEING IS TOUCHING and EXPRESSIONS OF EMOTION ARE OBJECTS ON THE FACE. In SEEING IS TOUCHING, the eyes are metaphorically understood as being limb-like, able to extend out from the body, move in various directions, and touch objects. Examples include:

-I can't take my eyes off of her.
-Her eyes picked out every detail of the pattern.
-Don't let your eyes wander.
-His eyes are glued to the TV.
-Their eyes met.
-He undressed her with his eyes.

What are the semantic roles played by "NP's eyes" in these sentences? Or take the examples in EXPRESSIONS OF EMOTION ARE OBJECTS ON THE FACE, as in:

-Wipe that smile off your face.
-Put on a smile for the cameras.
-The look of tranquility fell from his face when he heard the news.
-He had a scowl on his face.

What are the semantic roles played by "smile", "scowl", and "look" in these sentences? What principles link these roles to the way they are expressed? With a metaphoric analysis, the answer is reduced to the source domain answer. Without such an analysis, we get further a proliferation of roles and principles for express-ing them.

As soon as one decides to take seriously the full range of examples in a language, it becomes clear that truth-conditional semantics will not do for the study of semantic roles. A cognitive semantics, that includes accounts of metaphor and metonymy will be necessary.

Conclusion

Truth-conditional semantics leads to a proliferation of semantic roles and of principles for expressing them. The theory of metaphorical semantics, which has widespread independent motivation, both avoids a proliferation of semantic roles and permits generalizations governing how semantic roles are expressed.

Metaphor is vital to the proper characterization of semantic roles and to the statement of principles for expressing those roles. It is by no means the only factor involved, but it is a major factor. Truth-conditional semantics is simply inadequate to the task.

Basic Metaphor References

Johnson, Mark. 1987. *The Body in the Mind.* University of Chicago Press.

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

Lakoff, George. 1987. *Women, Fire, and Dangerous Things.* University of Chicago Press.

Lakoff, George and Mark Turner. To appear in 1988. *More Than Cool Reason: A Field Guide to Poetic Metaphor.* University of Chicago Press.

Reddy, Michael. 1979. The conduit metaphor. In Ortony, A. (ed), *Metaphor and Thought.* Cambridge University Press.

Sweetser, Eve. To appear. *From Etymology to Pragmatics: The Mind-as-Body Metaphor.* Cambridge University Press.

Turner, Mark. 1987. *Death Is The Mother of Beauty: Mind, Metaphor, and Criticism.* University of Chicago Press.