Metaphor in Cognitive Sciences

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Abstract. Contemporary cognitive science and literary criticism take great interest in the study of metaphor in the text. Their research has demonstrated that metaphor is a fundamental mode of cognition, affecting all human thought. The reading audiences share many things – conceptual systems, social practices, commonplace knowledge, and discourse genres. Modern literary criticism analyzes the use of the cognitive apparatus in conducting conversations that are often extensions of literature.

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Contemporary cognitive science and linguistics take great interest in the study of metaphor. Generally, classical rhetoric sought to discover the commonplaces of knowledge, the connections between thought and language. Aristotle wanted to know how figures of speech connect with figures of thought. In contemporary
literary theory, metaphor is defined as “a figure of speech in which one thing is described in terms of another” [2, p. 507]. Contemporary theories are based largely on the data of linguistics and the cognitive sciences. Some of the major works in this field are Lakoff and Jonson’s *Metaphors We Live By* (1980), Reddy Michael’s *The Conduit Metaphor* (1979), Nagy William’s *Figurative Patterns and Redundancy in the Lexicon* (1974), Mark Turner’s *Death is the Mother of Beauty* (1980).

Their research has demonstrated that metaphor is not merely a matter of words but is rather a fundamental mode of cognition affecting all human thought and action, including everyday language.

The reading audiences share many things – conceptual systems, social practices, commonplace knowledge, discourse genres, common language. Cognitive sciences seek to analyze these common cognitive systems and the ways in which they can be used.

Modern literary criticism analyzes the cognitive apparatus underlying language and the use of this apparatus to conduct conversations that are often extensions of literature. Literary language abounds with the metaphorical uses of kinship terms. E.g. “Babylon is the mother of harlots and abominations” (W. Blake), “The Moon is the mother of pathos and pity” (Stevens), “Darkness, lights elder brother” (J. Donne), “Invention, nature’s child, fled Stepdame Study’s blows” (Sidney); proverbs “Necessity is the mother of invention”, “A proverb is the child of experience”.

Each of these expressions is a specific linguistic metaphor, that is, a metaphorical idea expressed in words. But the metaphorical ideas themselves are conceptual matters, matters of thought that underlie the particular words that express them. While there is an infinity of such expressions at the level of particular words, they all derive from a few basic metaphors at the conceptual level. They combine and interact with our knowledge of kinship and yield ten basic metaphoric patterns about kinship.

The definition of metaphor says that when two things share salient properties, one can be used as the metaphor for the other in order to evoke our recognition of some of their shared properties. The definition presupposes that the relevant properties that constitute the similarity are already embodied in our conceptual representations. So, “metaphors do not impose structure on our concepts, but rely on previous structure and highlight or select aspects of that given structure” [3, p. 36].

A metaphor, in general, provides a way of seeing one conceptual domain in terms of another conceptual domain. An instance of the basis conceptual metaphor is Understanding is seeing. Cognition and vision are different, though related, domains of experience. Vision is structured in familiar and obvious ways. Understanding is something that must be understood in terms of some other domain. Seeing is a structured activity which is related to understanding in a systematic way, since a great deal of information comes from seeing. It allows us to impose on the concept
of understanding the structure that we have for vision. Thus, we can close our eyes
to a problem, change our point of view, develop a new perspective on an issue,
concentrate our focus or change it, and so on.

It may seem as if closing our eyes and closing our eyes to a problem share
properties. They may seem to share properties because we see one automatically as
the other; understanding is seeing metaphor is deeply entrenched in our conceptual
systems. But closing our eyes and closing our eyes to a problem do not really share
properties in any scientific sense. So metaphor is not just a matter of recognizing
objectively preexisting shared properties. In many cases, the properties are shared
by virtue of some metaphorical understanding.

Basic metaphors often do creative work. They impose structure. They impose
salient properties. Creative metaphors call for conceptual revision. They require
us to reconceive the ontology of a thing. They entail the attribution of new salient
properties. and thus create similarity. When a writer and reader share models of
child as guileless and natural, they refer to a guileless, natural person as a child, and
it entails no conceptual revision. It is simply a thing (the person) is what it has salient
properties of (child). It is no longer inventive in English to call an unsophisticated
and natural person a “child of Nature”; no conceptual revision is involved here. It
is an example of Aristotle’s metaphor, “a thing is what it has salient properties of”.

When a writer revises his concept of architecture to see how “Architecture is
frozen music” or he revises his concept of the relation of childhood to adulthood
do see how “The child is the father of the man”, the reader has at least temporarily
to revise his concepts of architecture and the relation of childhood to adulthood in
order to understand the metaphors. If the revision is not temporary but permanent,
the metaphors will be for the reader cases of a thing is what it has salient properties
of, or Aristotle’s metaphor.

There are, however, some metaphors that in no sense can be seen as involving
shared properties. The metaphorical expressions “Stocks fell on the New York
Exchange”, “Congress has put a ceiling on funding for basic research”, based on
the orientational metaphor more is up do not contain any shared properties. and
there are a wide variety of such cases.

There are some conceptual processes that are independent of kinship, but which
interact with our knowledge of it to yield kinship metaphors. There are various folk
theories about kinship in general and about specific kinship roles. One of them is
that, normally, children inherit salient characteristics of parents. The folk theory of
inheritance is a folk theory about kinship. One of the basic kinship metaphors is the
whole is the mother of the parts. Nodes representing linguistic categories are called
“mother nodes”.

The folk theory of kinship includes the very basic notion that children spring
from their parents. and hence they are called “offspring”. This motivates the basic
kinship metaphor: what springs from something is its offspring. For ex., Italian
springs from Latin. Therefore, Italian is the offspring of Latin. This metaphor has three special cases. The first involves causation. Since effects spring from their causes, causes are parents and effects are offspring. For ex., age is the mother of sickness.

The second special case that involves causation, conditions are causes and results are effects. It yields a basic kinship metaphor, conditions are parents and results are offspring. Also, there is the basic metaphor the subsequent thing springs from the initial thing which yields to “the subsequent thing is the offspring of the initial thing”. So, we say “Filth is the mother of stench”. Filth is a condition which results in stench. Filth is a cause, and stench is its result. Therefore, filth is a parent whose offspring is stench.

According to our folk theory of kinship, groups of siblings have two kinds of properties. First, they have the salient characteristics of their parents. Second, groups of siblings have functional properties: family loyalty, common cultural background, and so on. Thus, a group whose members share salient properties is metaphorically a group of siblings. Therefore, members of a natural group are siblings. An example is “Death is the brother of sleep”, where death and sleep are seen as similar states of inactivity. A different example is “brothers in distress”, where the members of the group are like siblings because they function as brothers, behaving loyally toward each other in the face of a common danger.

These basic kinship metaphors yield ten basic metaphoric inference patterns which account for how all such specific metaphors are understood. For example, (1) property transfer. We associate properties with each kinship role. Some of these properties are inherent, some are functional. A mother has the inherent property of being female and the functional property of nurturing. If we call someone a child, we call him childlike. This is property transfer. Consider Blake’s “Why weepest thou, Tharmas, child of tears in the bright house of joy?” Tharmas is characterized via property transfer, as childlike in his emotional reactions. The transferred functional property is often a treatment, behaviour, or function of a kin relation, as in “He was a child of all the dale – he lived / Three months with one, and six months with another”. The “he” is being cared for, a way in which, according to our conceptual models, children are typically treated.

Another metaphoric pattern is based on (2) similarity. We know that if two things share an inherent property, they have the same parent, and hence are siblings. We understand “Death is the brother of sleep” as implying that death and sleep are similar because they share the property of inactivity. Similarity can be wholly or partially specified, as in the following examples: “Sparta in laws and institutions is the sister of Crete”. (Jowett, OED); “Here’s the twin-brother of thy letter” (Shakespeare); “That April Morn, of this the very brother” (Wordsworth); “Other diseases, neere cousins to the plague” (Cogan, OED).
(3) **Group.** In our folk theories, groups of siblings have functional properties. Any other group, having those properties, is a group of siblings. Marital relations are also used to indicate grouping. This frequently coheres with the behaviour patterns, a special case of functional property transfer. For instance, "*Partners in faith, and brothers in distress*" (Wordsworth); "*If music and sweet poetry agree, ... the sister and the brother*" (Shakespeare); "*Brothers in soul! through distant times*" (Wordsworth) imply both a natural grouping and the pattern of behaviour toward each other in brotherly fashion.

(4) **Inheritance.** This inference pattern derives as follows: according to basic metaphor "an abstract property is the parent of something having that property", the kinship role inherits properties of something associated with parents, e.g. "*Invention, nature's child*" (Sidney). "*They are villaines, and the sonnes of darkness.*" (Shakespeare); "*Virtue is the daughter of Heaven*". (Pound).

(5) **Components and Contents.**

The components or contents of something can be its offspring, as in "*The days of life are sisters*". This inference pattern derives from the basic metaphor "the whole is the mother of the parts". This metaphoric pattern often combines with place and time, e.g. "*Daughters of Time, the hypocrite Days*" (Emerson). Donne uses "*children of his quiver*" as a metaphor for arrows. The arrows are contents of the quiver, and therefore, by virtue of the contents inference pattern, offspring of the quiver.

(6) **Order and succession.** Lateral relations can be modified to indicate precedence of birth and hence temporal or logical precedence, as in: "*Darknesse, lights elder brother, his birth-right
Claims o'r this world, and to heaven hath chased light.*" (Donne).
"*Venice, the eldest Child of Liberty*" (Wordsworth).

(7) **Causation as progeneration.** This inference pattern derives from the basic metaphor "conditions are parents and results are offspring". Kinship generation can be used to express causation as progeneration. Causation in cases of kinship metaphor is always a necessary connection, e.g. "*sicknesses, or their true mother, Age*" (Donne).

Causation also covers the metaphysical cosmogony typical of mythologies, as in "*Some say the Light was father of the Night /And some, the Night was father of the Light*". (Tennyson).

(8) **Biological resource as parent.**

There is an understanding of nature in which reproduction constitutes only one kind of biological resource as parent. Biological products are offspring of biological resources, for example. "*... the earth, great mother of us all*" (Spenser); "*Water ... was by some thought to be the Mother of Earth*" (OED).

(9) **Place and time as parent.** This inference pattern denoting location and situation gives birth to their occupants. In Spenser's "*That daintie Rose, the laughter of her Morne*" property transfer characterizes the rose as feminine and young.
The inheritance inference pattern combines with place and time as parent in:

"Whispered the Muse in Saadi’s cot:
O gentle Saad; listen not,
Tempted by thy praise of wit,
Or by thirst and appetite
For the talents not thine own,
To Sons of contradiction.
Never, son of eastern morning,
Follow falsehood, follow scorning."
(Emerson)

Here, “son of eastern morning” implies that the East is a place produced Saadi, but also that he inherits Eastern, in contradiction to Western, ways of thinking.

Place and time as parent frequently cannot be distinguished from inheritance of both qualities and beliefs. The Scriptural “children of the East”, “children of the world”, “children of the day”, “child of the age” exemplify this blend.

(10) Lineage in the world, the mind, and behaviour. Kinship metaphor is most revealing and illuminating in its aptitude to model mental events. It can express the paths by which things in the world, the mind, and behaviour spring from each other. Usually, these expressions concern how mind affects itself, how world effects mind, and how mind affects behaviour, as in

“Enterprise! Daughter of Hope! Her favourite Child!
Whom she to young Ambition bore.”
(Wordsworth)

“Fear, father of cruelty”.
(Pound)

“... certainly / mother and nurse of repose”.
(Pound)

Recently, metaphor research has moved on. Metaphor is studied not only in cognitive linguistics, but in economics, psychology, theology and language teaching. Cognitive metaphor theory became an attractive enterprise for linguists and nonlinguists alike.

List of Literature