Review paper UDC
doi: 10.21464/sp32202
Received: May 31, 2017

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Metaphor and Metonymy in Language and Thought: A Cognitive Linguistic Approach

Abstract

Cognitive Linguistics *(CL) is a cover term for some functionalist and cognitivist approaches to the study of language that emerged in the 1970s and share basic theoretical and methodological tenets, most of which are incompatible with Noam Chomsky's theory of Generative Grammar and its more recent offshoots. CL diverges from generative grammar among other things (i) in rejecting the Chomskyan claim that the language faculty is innate, (ii) in emphasizing the semiotic character not only of words but also of grammatical constructions as meaningful units of language, (iii) in attributing an important cognitive and linguistic role to metaphor and metonymy, and (iv) in contending that language structure and use are (relatively) motivated by conceptual and pragmatic factors. The article focuses on points (ii), (iii), and (iv), which are supported empirically by authentic English language data.*

Keywords

cognitive linguistics, generative grammar, grammatical constructions, language and thought, metaphor, metonymy, motivation

1. Introduction

Cognitive Linguistics is a paradigm that originated in the United States in the 1970s and spread to many countries in Europe and to Asian countries such as Japan, South Korea, and China. It developed into a serious competitor to the hitherto dominant theoretical framework in linguistics, Generative Grammar.

Up to the 1950s, the science of language in the United States had had a mainly structuralist orientation, which is known as Descriptivism. Descriptivism is a non-mentalist or even anti-mentalist approach to the study of language, epitomized e.g. in Leonard Bloomfield's influential monograph *Language* (1933). Bloomfield was beholden to the then prevalent psychological doctrine of *behaviorism*: The human mind is a black box, only behavior, i.e. stimulus-response patterns, is observable, and hence statements about the nature of the human mind and its relation to language are speculative and unscientific.

The behaviorist approach to language was seriously challenged in 1959 by Noam Chomsky, a young linguist at the Massachusetts Institute of Technology, who wrote a scathing critique of the behaviorist B. F. Skinner's monograph *Verbal Behavior* (1957), a review article that appeared in the leading American linguistic journal *Language*. Chomsky argued that the human language faculty is a "mental organ", as he put it metaphorically, and that hence linguistics crucially involves the study of an important aspect of the human mind.

In his writings, Chomsky distinguishes between two dimensions of language: language as a knowledge system, which he calls *linguistic competence*, and the application of this system in actual language use, which he dubs *linguistic performance*. According to Chomsky, the central object of the science of language should be competence, i.e. the (mostly) subconscious knowledge that native speakers have of their mother tongue.

Because of the paradigm shift he initiated – from language as a kind of behavior or habit formation to language as an autonomous module of the human mind – Chomsky can be called a "cognitive linguist" *avant la lettre*, and it is not accidental that leading cognitive linguists in the United States, such as e.g. George Lakoff and Ronald Langacker, originally adhered to the Chomskyan doctrine before developing theoretical frameworks that are, in many ways, incompatible with Chomsky's conception of language and its acquisition (see section 2).

Chomsky (1988: 4–5) claims that a purely behaviorist, i.e. empiricist approach to language, faces a conceptual paradox. The paradox is known as *Plato's problem*, which was already formulated by the British philosopher Bertrand Russell in the following way:

> "How comes it that human beings, whose contacts with the world are brief and personal and limited, are able to know as much as they do?" (quoted in Chomsky 1988: 4)

Chomsky's answer to Plato's problem with regard to the acquisition of linguistic competence is as follows:

i. Humans learn their mother tongue relatively effortlessly because the language faculty is innate, i.e. a specialized module of the human mind. In other words, humans are born with a "universal grammar", a set of universal grammatical rules, principles, and constraints. Before even starting to learn their native language, infants already "know" at least some of the universal properties that all human languages share.
ii. The language faculty is not derivable from other general human cognitive abilities, e.g. intelligence and the cognitive processing of perceptual and experiential events.

What Chomsky's mentalist framework and Cognitive Linguistics have in common is their anti-behaviorist stance. However, Cognitive Linguistics differs substantially from Chomskyan Generative Grammar in at least the following respects:

i. the nature of the linguistic sign,
ii. the nature of the language faculty,
iii. the cognitive mechanisms at work in the acquisition of language,
iv. the overall architecture of grammar, including its relation to phonology, semantics, and pragmatics, and
v. the theoretical status of linguistic performance (i.e. actual language use).

Section 2 of this article provides a brief introduction to the variety of paradigms that are designated by the cover term 'Cognitive Linguistics'. Section 3 focuses on metaphor and metonymy, two tropes that in Cognitive Linguistics are regarded not only as figures of *language* but, importantly, also of *thought.* Some cognitive linguists, including the present authors, maintain that metonymy is an even more basic figurative device than metaphor, and in sections 4 and 5 the conceptual and pragmatic function of metonymy is analyzed in more detail. In section 4, the crucial role of metonymy in the resolution

of conceptual conflicts between construction meaning and lexical meaning is illustrated with some examples. Section 5 considers the workings of metonymy in semiotic modes other than natural language; by way of example, it is shown with one example that the interpretation of visual art may rely on metonymic thinking. Finally, section 6 concludes this contribution with a brief answer to the question whether metonymy is a "dedicated comprehension mechanism".

2. Some basic theoretical and methodological assumptions of Cognitive Linguistics

In section 1, we have pointed out that in the 1960s cognitive linguists such as Ronald Langacker and George Lakoff were influenced by the Chomskyan paradigm, but especially Lakoff soon began to criticize the conception of language and the architecture of grammar developed in Chomsky (1965). In accordance with linguists such as John Robert Ross, James D. McCawley, and Paul Postal, Lakoff rejected, among other things, the concepts of syntactic deep structure and interpretative semantics, where the latter is supposed to be based on syntactic deep structure or surface structure as advocated by Chomsky (1965) and Jackendoff (1974), respectively. In contrast, Lakoff, Ross, McCawley, and Postal argued for a semantically-based grammar, a model known as *generative semantics*. The dissension regarding the architecture of grammar between Chomskyans and generative semanticists has aptly been characterized metaphorically as "linguistics wars" by Randy A. Harris (1993) (for further details about these theoretical controversies, see also Gutknecht and Panther 1973). Although, in some respects, generative semantics was still committed to the Chomskyan paradigm, the focus on meaning and pragmatic use constituted an important step forward to a cognitive linguistic approach to language. George Lakoff (1987: 82) regards "cognitive grammar as an updated version of generative semantics".

As a convenient point of departure for a brief description of some important features of Cognitive Linguistics, it might be helpful for the reader to consider human cognition and its relation to other "peripheral systems" as diagrammed in Figure 1.

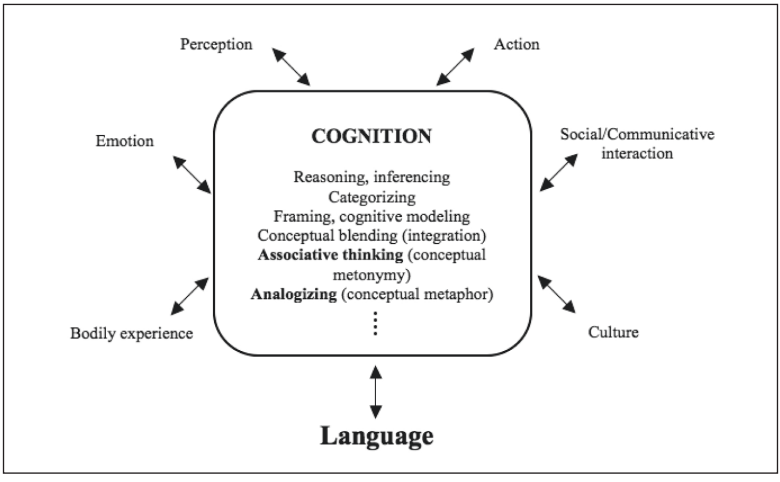

Figure 1. Cognition and its interactions with other human systems (adapted from Panther and Radden 2011: 2)

Following Panther and Radden (2011), we regard cognition in the narrow sense as consisting, among other things, of the higher mental faculties of humans to reason and to infer, to categorize, to construct cognitive models (framing), to blend two or more concepts into a new concept (see Fauconnier and Turner 2002), and to perspectivize. In this contribution, for reasons of space, we focus on the mental skills of analogical thinking (conceptual metaphor) and, in particular, of forming associations among concepts (conceptual metonymy), with occasional references to some additional important cognitive faculties listed in Figure 1. These cognitive abilities interact with (as indicated by the double-headed arrows), i.e. feed into and receive feedback from, peripheral systems such as bodily experience, perception, emotion, action (including social and communicative interaction), culture, and, importantly, language. We claim that an adequate cognitive theory of language has to take the parameters diagrammed in Figure 1 into account.

Cognitive Linguistics, at its present stage, is not a homogeneous theory of language. However, there are basic assumptions and commitments shared by different variants of the general paradigm. Among these are the following:

i. Human languages are semiotic systems that pair forms, i.e. morphemes, words, and constructions with conventional meanings and communicative functions. Furthermore and importantly, in actual language use meanings and communicative functions are often not explicitly coded but speakers *imply* and hearers *infer* additional meanings and functions (e.g. *implicatures* in the sense of Grice 1975).
ii. General cognitive faculties and learning skills (in contrast to Chomsky's innateness hypothesis) suffice to account descriptively and explanatorily for the mechanisms of language acquisition.
iii. Cognitive linguists reject the common methodological practice of Chomskyan linguists to rely on introspectively gained linguistic data. The introspective method is based on the (problematic) assumption that the native speaker of a language (intuitively) "knows best" what is a grammatically well-formed and/or acceptable expression, e.g. sentence, in the mother tongue.
iv. In contrast to the Chomskyan introspective method, Cognitive Linguistics favors a *usage-based* approach to the study of language (see e.g. Langacker 2008, 2013). The usage-based approach presumes that the empirical basis of linguistic analysis should be authentic language data, which at present are increasingly available as large online corpora. The existence of electronic corpora has also given rise to what some cognitive linguists call the "quantitative turn" in linguistics (see Janda 2013), i.e. the analysis of large numbers of linguistic data by means of advanced statistical methods (for some challenges faced by usage-based analyses, see Divjak 2015).
v. Regarding linguistic *meaning*, a ground-breaking approach inspired by developments in cognitive psychology and cognitive science has led to, among other things, a rejection of structuralist semantics in terms of atomic semantic features (componential analysis) and logic-based truth conditional semantics, as they are taken more or less for granted in the Chomskyan paradigm. Cognitive Linguistics adopts Wittgenstein's (2009: 36) concept of *family resemblances* (German *Familienähnlichkeiten*), as illustrated in his *Philosophical Investigations* with the "activities that we call 'games'" (German *Spiele*). Wittgenstein argues that it is impossible to define what a game is in terms of

necessary and jointly sufficient properties or features. A related approach to categorization, which has also had a profound influence on Cognitive Linguistics, goes back to the cognitive psychologist Eleanor Rosch (e.g. 1975). She has shown experimentally that categories such as FURNITURE have a *prototypical* structure, i.e., FURNITURE is not a category that can be defined in terms of necessary and sufficient properties, but individual members of the category are ranked on a "goodness-of-example" scale (see Taylor 1995: 44). For example, subjects consider CHAIR, SOFA or TABLE as good exemplars of the category FURNITURE; in contrast to REFRIGERATOR or TELEPHONE that are ranked very low on the goodness scale, and are thus not regarded as representative members of the category FURNITURE. Such empirically supported work on category structure challenges what is generally called the *Aristotelian* approach to categorization. Finally, another promising approach to conceptualization is what is known as the *embodiment* hypothesis. In Vyvyan Evans' (2007: 66) formulation, the basic insight of the embodied cognition hypothesis is that "the human mind and conceptual organisation are a function of the way in which our species-specific bodies interact with the environment we inhabit". Figure 1 represents this hypothesis as "peripheral" systems that interact with cognition; e.g. bodily experience, perception, and action. The concept of embodied cognition is highly relevant to the semantics of human languages, in particular, to an adequate understanding of *metaphor* and *metonymy*, two basic tropes of thought and language, which are presented and exemplified in the following sections.

3. Figurative thought and language: metaphor and metonymy

3.1. Primary and complex metaphor

In Cognitive Linguistics, metaphor is seen as a prime example of embodied meaning. Two major metaphor theorists, the linguist George Lakoff and the philosopher Mark Johnson (Lakoff and Johnson 1980, 1999), following Joseph Grady (1997), distinguish between *primary* and *complex* metaphors. Primary metaphors are directly related to experience, often bodily experience, and, according to Lakoff and Johnson (1999: 50), they constitute basic conceptual correlations from which complex metaphors are built up. In what follows, the subscript *S* stands for the metaphorical source and *T* for the metaphorical target; the double-lined arrow '⇒' symbolizes the metaphorical relation between the source and the target meaning.

Instances of primary metaphors postulated by Lakoff and Johnson are:

(1) a. $\text{CLOSENESS}_S \Rightarrow \text{INTIMACY}_T$
b. $\text{DESTINATIONS}_S \Rightarrow \text{PURPOSES}_T$
c. $\text{WARMTH}_S \Rightarrow \text{AFFECTION}_T$

For example, (1a) is to be interpreted as meaning 'emotional intimacy (target meaning) is conceptualized in terms of spatial closeness (source meaning)'. Thus in English we find expressions such as

(2) a. Mary and Pam were close friends.
b. He experienced a lack of closeness to his parents during childhood. [https://www.thefreedictionary.com]

Lakoff (2008: 27) describes the experiential basis of the primary metaphor (1a) as follows:

"… the people you are most intimate with are typically the people you have spent time physically close to: your family, lover, and so on."

Complex metaphors can be seen as (at least partially) *iconic* relations, i.e. structure-preserving *mappings* from one conceptual frame (source) into another (for discussion, see Panther 2006). The schematic structure of complex linguistic metaphors is diagrammed in Figure 2.

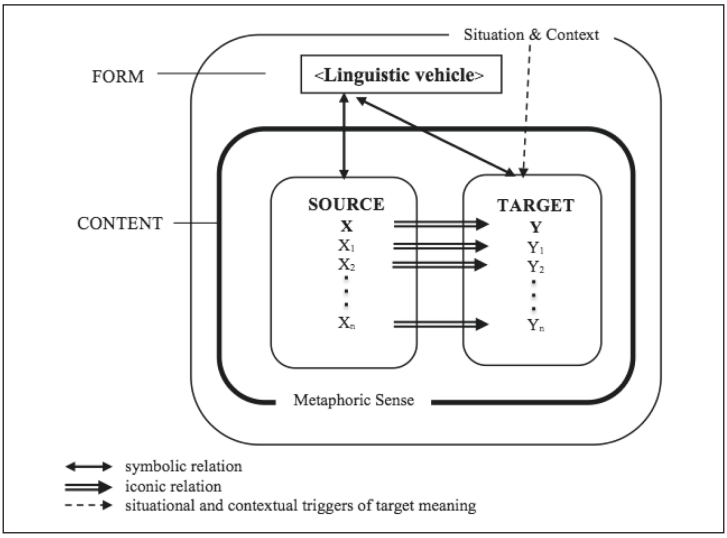

Figure 2. Complex metaphor

A metaphor is produced in a certain (extralinguistic) situation and a (linguistic) context. The word or expression that triggers the metaphor is called the *linguistic vehicle*, which conveys a conventional ("literal") meaning, the *source* meaning. This meaning is represented by means of a *conceptual frame*, a mental representation in terms of meaning components that entertain various conceptual and encyclopedic relations with one another (see Ziem 2014 for an in-depth introduction to and discussion of frame semantics). Components of the source frame are iconically mapped onto another distinct conceptual frame, the *target*. The target frame is thus structurally isomorphic to the source frame, i.e., it is a kind of analogical replica of the source frame (see the characterization of metaphor as analogical thinking in Figure 1).

The notion of complex metaphor can be illustrated with some lines from William Shakespeare's comedy *As You Like It*, Act II, Scene VII:

(3) All the world's a stage,
And all the men and women merely players;
They have their exits and their entrances,
And one man in his time plays many parts,
His acts being seven ages.

At the most schematic level the underlying metaphor in (3) can be notated as $\text{STAGE}_S \Rightarrow \text{WORLD}_T$ (printed in bold in Figure 3), which implies a number of submetaphors (in normal print):

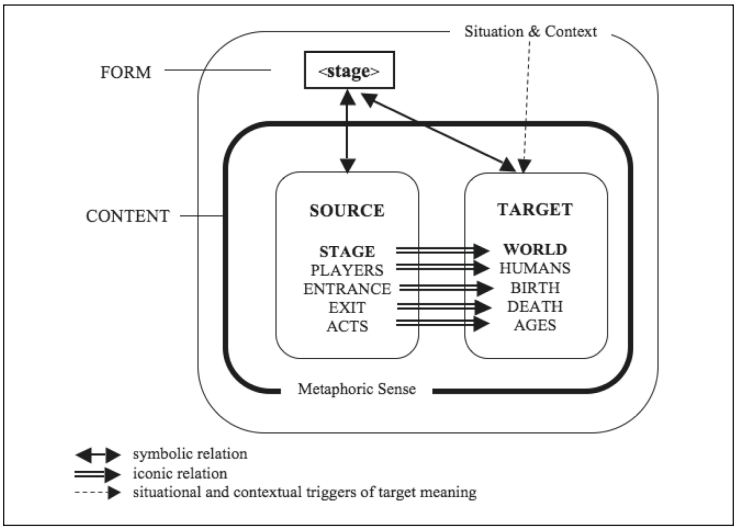

Figure 3. The complex Shakespearean metaphor $\text{STAGE}_S \Rightarrow \text{WORLD}_T$

As another non-literary ordinary language metaphor that has been discussed in some detail in the cognitive linguistic literature, consider the conceptualization of human life as a journey: $\text{JOURNEY}_S \Rightarrow \text{LIFE}_T$. Lakoff and Johnson (1999: 60–62) suggest that this metaphor is based on a *cultural model* such as (4) that involves primary metaphors as in (5):

(4) "People are supposed to have purposes in life, and they are supposed to act so as to achieve those purposes." (Lakoff and Johnson 1999: 61)

(5) a. $\text{DESTINATIONS}_S \Rightarrow \text{PURPOSES}_T$

b. $\text{MOTIONS}_S \Rightarrow \text{ACTIONS}_T$

The mappings operative in the complex metaphor $\text{JOURNEY}_S \Rightarrow \text{LIFE}_T$ can then be represented as in Figure 4:

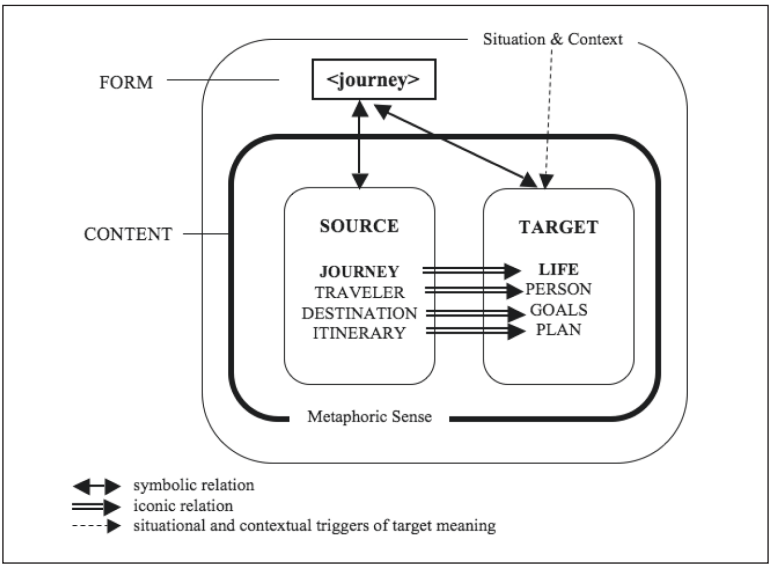

Figure 4. $\text{JOURNEY}_S \Rightarrow \text{LIFE}_T$

3.2. Metaphorical framing

In Figure 1, the double-headed arrows that connect cognition to various peripheral systems, one of which is language, indicate the possibility that the linked components mutually influence each other (see Panther and Radden 2011 for detailed discussion). With regard to metaphor, the notation suggests that this trope is not merely a *façon de parler* but that it may reflect the ways language users *think* about the world, i.e. metaphors may "frame" people's thinking. In what follows, by way of example, we report an experiment conducted by cognitive psychologists Paul Thibodeau and Lera Boroditsky (2011) that supports the Lakoffian claim that metaphor *does* indeed have an impact on cognition.

In Thibodeau and Boroditsky's experiments, participants, who were divided into two groups, were given a text about the crime rate in a fictitious town named 'Addison'. The first group read a text that systematically conceptualized crime as a virus (see (6)) whereas the second group received a text that conveyed the same content but metaphorized crime as a wild beast (see (7)) (Thibodeau and Boroditsky 2011: 3):

(6) Group 1: $\text{VIRUS}_S \Rightarrow \text{CRIME}_T$

"Crime is a virus infecting the city of Addison. The crime rate in the once, peaceful city has steadily increased over the past three years. In fact, these days it seems that crime is plaguing every neighborhood (…)."

(7) Group 2: $\text{WILD BEAST}_S \Rightarrow \text{CRIME}_T$

"Crime is a wild beast preying on the city of Addison. The crime rate in the once peaceful city has steadily increased over the past three years. In fact, these days it seems that crime is lurking in every neighborhood (…)."

After the participants had read their respective texts, they were asked, among other things, the following question: "In your opinion, what does Addison need to do to reduce crime?" Thibodeau and Boroditsky found (ibid.: 4) that "[p]articipants given the crime-as-beast metaphorical framing were more likely to propose enforcement (74%) than participants given the crime-as-virus framing (56%)". In general, Group 1 participants, who were exposed to the metaphor $\text{VIRUS}_S \Rightarrow \text{CRIME}_T$, recommended better education, reduction of poverty, and social reform as effective measures to reduce the crime rate, whereas Group 2 participants, who had been subjected to the metaphor $\text{WILD BEAST}_S \Rightarrow \text{CRIME}_T$, were in favor of law enforcement, police force, and prison sentences to achieve the same objective.

In conclusion, there is some evidence that metaphors have an influence on how people think and behave (for the role of metaphorical framing in political discourse, see e.g. Lakoff 2016 and Wehling 2016).

3.3. Metonymy

Like metaphor, metonymy is a ubiquitous phenomenon in ordinary language. To begin with, consider an inscription found on many ATMs (an abbreviation for 'Automated Teller Machine') in England:

(8) Free cash machine.

Only very naive people would take message (8) as meaning that the ATM in question dispenses free money. A more plausible interpretation, in line with language users' world knowledge and social experience, is that customers

can withdraw money from their own bank accounts without being charged a service fee.

As a further example, consider the advertisement

(9) Great hair doesn't happen by chance … it happens by appointment.

Great hair is a substance (nice to look at), but since it is not an event, it *cannot happen*. Nevertheless, it is possible to reinterpret *great hair* metonymically as an event; more precisely, a set of actions performed by a hairdresser that results in good-looking hair. This interpretation is reinforced by the prepositional phrase *by appointment*, which marks the beginning of a series of actions that lead to the desired result *great hair*.

Examples (8) and (9) illustrate the pervasive phenomenon of metonymy. Some cognitive linguists, including the present authors, regard conceptual metonymy as an even more basic figure of thought and language than metaphor. The basic metonymic relation is diagrammed in Figure 5.

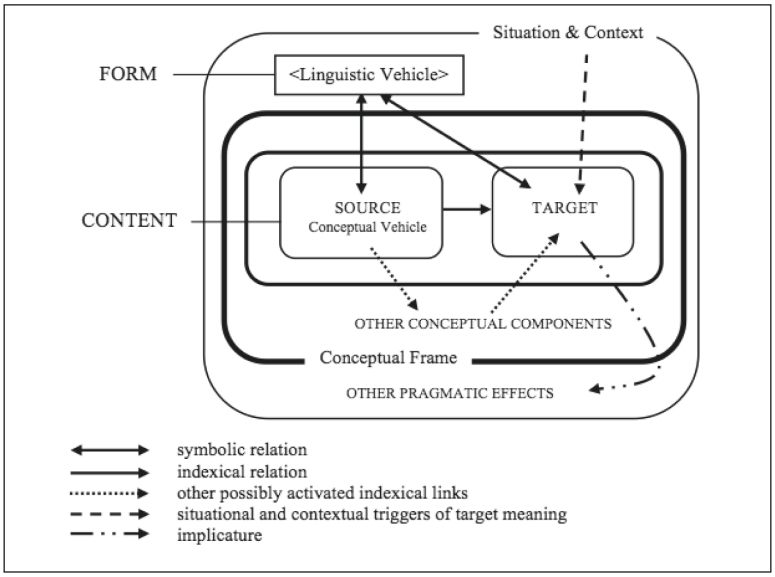

Figure 5. Metonymy

In what follows, some characteristics of metonymy are listed:

i. Metonymy is an associative or, from a semiotic perspective, indexical relation between meaning components within *one* conceptual frame (in contrast to metaphor, which is an iconic relation between two conceptual frames).

ii. Metonymy is not specific to language but exists in other semiotic modes, such as e.g. the visual arts (see Panther 2005).[1]

iii. Metonymy involves a *linguistic* vehicle that denotes a semantic component in a conceptual frame, the source meaning, which, in turn, serves as a *conceptual* vehicle to access a target meaning (see Kövecses and Radden 1998; Radden and Kövecses 1999). The source meaning is conceptually integrated into the target meaning as a result of the metonymic operation.

1 This is a feature that metonymy shares with metaphor.

iv. The relation between source and target is *conceptually tight* (cf. Panther and Thornburg 1998; see also Fauconnier and Turner's 2002 notion of conceptual *compression*).
v. The relation between source and target is typically *contingent*, i.e. conceptually non-necessary.
vi. Languages may differ as to the conceptual relations they metonymically exploit.

Using the subscripts *S* and *T* for 'source meaning' and 'target meaning', respectively (as before for metaphor), and the single-lined arrow '→' for the metonymic relation, we represent the link between the source and the target meaning as in (10), exemplified by (11):

(10) $[X]_S \rightarrow [Y\ [X]_S]_T$
(11) $[\text{MOZART}]_S \rightarrow [\text{MUSIC COMPOSED BY}\ [\text{MOZART}]_S]_T$

Some typical metonymic relations exploited in English and other languages are:

Locations and events that happen there

(12) *Rio* was a success → 'The events that occurred in Rio were a success'

Causes and their effects

(13) a *healthy* diet → 'a diet that causes health'

People and their salient attributes

(14) The *blonde* walked into the room → 'The woman with blond hair walked into the room'

The virtual and the actual

(15) He *was able to* do it → 'He managed to do it'

The following pragmatic types of metonymy can be distinguished (see Panther and Thornburg 1998): (i) *propositional metonymies*, which can be *referential* and/or *predicational*, and (ii) *illocutionary metonymies* (see Searle 1969 for the distinction between propositions (reference, predication) and illocution).

3.3.1. Referential metonymies

Referential metonymies operate on nominal expressions, e.g. noun phrases and proper nouns. The following examples have been extracted from the *Corpus of Contemporary American English* (COCA), with the year of attestation given in parentheses (italics added):

(16) I mean the fact that you like *Brahms*, for instance, doesn't mean that you are not going to like *Little Richard*. (COCA 1997)
(17) I'm not going to name *names*. Everybody knows who I'm talking about. (COCA 2015)
(18) We haven't been bombing. We haven't even just sent in *boots* on the ground. (COCA 2015)

In (16) a ubiquitous metonymic relation is exploited in which a 19th century composer (*Brahms*) stands for the music he composed and a Rock and Roll

singer (*Little Richard*) for his music (composed and/or performed). This metonymy can be notated as:

(19) $[\text{COMPOSER}]_S \rightarrow [\text{MUSIC COMPOSED BY } [\text{COMPOSER}]_S]_T$

(19) is an instance of the high-level metonymy (20):

(20) $[\text{PRODUCER}]_S \rightarrow [\text{PRODUCT PRODUCED BY } [\text{PRODUCER}]_S]_T$

In (17), it is the *sign* relationship between *signifier* (form) and *signified* (content) that is metonymically exploited:

(21) $[\text{NAME}]_S \rightarrow [\text{PERSON BEARING } [\text{NAME}]_S]_T$

Note that in (17) the metonymic target interpretation PERSON is supported by the second clause *Everybody knows who I'm talking about*. The example demonstrates that in actual communication contextual clues may facilitate mental access to the target meaning.

In (18), reference is made to *boots on the ground*, and this nominal expression is a conventional metonymy for 'troops/soldiers on the ground'. The metonymic relationship between the source and the target meaning can be notated as in (22):

(22) $[\text{BOOTS}]_S \rightarrow [\text{MILITARY PERSON WEARING } [\text{BOOTS}]_S]_T$

Metonymy (22) is a subcase of the ubiquitous generic metonymy (23):

(23) $[\text{ATTRIBUTE}]_S \rightarrow [\text{PERSON POSSESSING } [\text{ATTRIBUTE}]_S]_T$

3.3.2. Predicational metonymies

Predicational metonymies operate on the verb phrase of sentences. Some examples are:

(24) I *had to take up* residency in Los Angeles.

(25) Kyle *could hear* the crashing of glass and metal.

(26) Soon he was *allowed to fly* to the United States, where he is in exile.

In (24)–(26), some event or action that, literally, is merely coded as potential is interpreted as really occurring. The metonymies at work in these examples are given in (27), (28), and (29), respectively:

(27) $[\text{OBLIGATION TO ACT}]_S \rightarrow [[\text{OBLIGATION TO ACT}]_S \,\&\, [\text{ACTUAL ACTION}]]_T$

(28) $[\text{ABILITY TO HEAR}]_S \rightarrow [[\text{ABILITY TO HEAR}]_S \,\&\, [\text{ACTUAL PERCEPTUAL EVENT OF HEARING}]]_T$

(29) $[\text{PERMISSION TO ACT}]_S \rightarrow [[\text{PERMISSION TO ACT}]_S \,\&\, [\text{ACTUAL ACTION}]]_T$

Metonymies (28)–(29) are instances of the higher-order metonymy given in (30):

(30) $[\text{POTENTIAL EVENT}]_S \rightarrow [\,[\text{POTENTIAL EVENT}]_S \,\&\, [\text{ACTUAL EVENT}]]_T$

This metonymy is extremely productive in e.g. English and German, but Panther and Thornburg (1999a), who call this metonymy POTENTIALITY FOR ACTUALITY, show that its use is more restricted in Hungarian.

3.3.3. Illocutionary metonymies

The third metonymy type can be called 'illocutionary metonymy' because it operates on the speech act level. The conceptual-pragmatic structure of illocutionary acts can be described in terms of *illocutionary frames* or, equiva-

lently, *speech act scenarios* (the latter term was coined by Thornburg and Panther 1997). To illustrate the workings of illocutionary metonymy, consider a simplified speech act scenario for directive speech acts such as requests (cf. the analysis of requests proposed by Searle 1969: 67, which, in some respects, differs from the one proposed here).

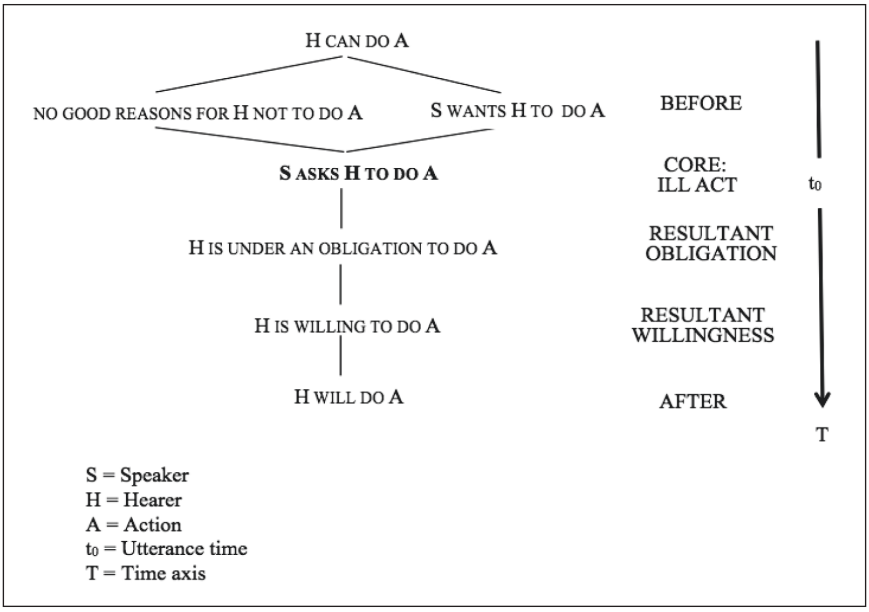

Figure 6. Illocutionary frame of a request

The illocutionary frame in Figure 6 is organized in the following way. There are phases or stages that are ordered along the time axis T, with t_0 designating the time of the performance of the illocutionary act, viz. what is referred to as the CORE in Figure 6. The CORE is preceded by the BEFORE, i.e. conditions that should be fulfilled for a felicitous performance of the illocutionary act, e.g. the condition that the hearer is able to perform the action requested, and the mental attitude condition (called 'sincerity condition' in speech act theory) that the speaker wants the hearer to perform the action. The actual performance of the illocutionary act has the immediate effect that the hearer is (more or less strongly) under an obligation to perform the action (RESULTANT OBLIGATION); and if the obligation is accepted, the hearer should be willing to perform the action (RESULTANT WILLINGNESS). Finally, there is the phase of satisfaction of the request, i.e. the hearer's actual implementation of the action, which is named the AFTER in Figure 6.

What is the descriptive or even explanatory value of assuming a frame or scenario approach to speech acts? In a nutshell, its strength is that it allows a cognitive linguistic account of what Searle (1975) calls *indirect speech acts* in terms of conceptual metonymy. When performing an indirect speech act, the speaker selects one element from the components BEFORE, RESULTANT OBLIGATION, RESULTANT WILLINGNESS, or AFTER as the metonymic source and in doing so provides the hearer with cues to mentally access the intended target meaning, i.e. the CORE of the illocutionary frame. The following examples illustrate this approach to indirect speech acts:[2]

$\text{BEFORE}_S \rightarrow \text{CORE}_T$

(31) Can/could you turn of the light?

(32) You can turn off the light.

(33) I want/would like you to turn off the light.

RESULTANT OBLIGATION$_S$ → CORE$_T$

(34) You must/should turn off the light.

RESULTANT WILLINGNESS$_S$ → CORE$_T$

(35) Would you mind turning off the light?

AFTER$_S$ → CORE$_T$

(36) You will turn off the light.

(37) Will you turn off the light?

4. The role of metonymy in semantic-pragmatic conflicts

In this section, the importance of metonymy in language is further evidenced by the role it plays in the resolution of conceptual conflicts between *word meaning* and *construction meaning*. While the concept 'word' can be taken for granted, it is necessary to provide a working definition of the notion of construction. A good starting point is the by now classical definition proposed by Adele Goldberg (1995: 4):

"C is a CONSTRUCTION iff$_{def}$ C is a form-meaning pair <F_i, S_i> such that some aspect of F_i or some aspect of S_i is not strictly predictable from C's component parts or from some other previously established constructions."

In a more recent monograph, Goldberg (2006: 5) abandons the unpredictability constraint on the form and/or meaning of constructions, but now treats meaningful morphosyntactic patterns as constructions as long as they occur with "sufficient frequency". Nevertheless, constructions, i.e. frequently recurring patterns, often exhibit idiomatic, i.e. not completely compositional (predictable) meanings, and this fact is a good reason for regarding constructions as semiotic units in their own right.

We illustrate the conflict between word meaning and construction meaning with what Panther and Thornburg (1999b, 2000) call *Action* constructions, i.e. constructions that, in the default case, require reference to an action performed by the speaker, the hearer, or a third party. Here is a (non-exhaustive) list of such Action constructions with illustrative examples (see also Panther and Thornburg 1999b: 38–39) (the action verb is italicized):

Imperatives

(38) *Clean* your desk.

(39) *Give* me a call. (COCA 2014)

What about V_{ING} […]?

(40) What about *giving* to my college? (COCA 2014)

(41) What about *working* four days a week […]? (COCA 1993)

Infinitive complement clauses requiring action verbs

(42) The Conservatives promised to *increase* NHS funding […]. (COCA 2015)

(43) He asked me to *work* for him at the end of 2004. (COCA 2015)

2
Obviously, there are sociocultural factors, e.g. politeness, that influence how a request is coded by the speaker, but a discussion of such factors is beyond the scope of this contribution (see e.g. Brown and Levinson 1987 for in-depth treatment of politeness).

Why not V_{INF} […]?

(44) Why not *try* for an English major? (GloWbE)[3]

(45) Why not *send* robots to an asteroid? (COCA 2011)

How to V_{INF} […]

(46) How to *handle* the slopes (COCA 2015) [from a golf magazine]

(47) How to *do* things with words.

Some brief comments on the above-mentioned constructions are in order. The communicative function of the imperatives (38)–(39) is *directive*; the hearer is asked to perform a future action. As to the constructional schema *What about V_{ING} […]?*, exemplified by utterances (40) and (41), it functions pragmatically as a suggestion about what the hearer could do or ought to do in the future. Infinitive complement clauses headed by directive verbs like *ask (to)* or commissive verbs like *promise*, as in (42)–(43), usually license an action verb in the complement clause. A potential future action is also referred to by the infinitival verb in the construction *Why not V_{INF} […]?*, which in (44)–(45) has the illocutionary potential of a strong suggestion with the meaning 'There is no (good) reason why the action denoted by *V* should not be carried out'. Finally, the construction *How to V_{INF} […]*, instantiated by (46)–(47), expresses an open proposition, whose variable pronoun *how* is specified in the subsequent discourse. This construction often appears in book titles or headlines of magazine articles, and the like.

On closer inspection, the generalization that the constructions instantiated by examples (38)–(47) require verbs denoting actions, is however falsified by authentic data such as (48)–(69), where the verb slot is filled with non-action verbs: e.g. stative verbs, such as *be*, *have*, *know*, etc. or verbs of change-of-state, such as *become*:

Imperatives with non-action verbs

(48) *Know* thyself.

(49) *Know* what is right and wrong. (COCA 2015)

(50) Come on. Do it. *Be* a big girl. (COCA 2015)

(51) *Be* a sweetheart and ask him to call me. (COCA 2012)

(52) *Become* a more valued contributor to your new team and the company. (COCA 2014)

(53) *Become* a regular Twitter user. (COCA 2013)

What about V_{ING} […]? with non-action verbs

(54) What about *living* in New York?

(55) What about *being* pain-free? Able to walk unassisted? (COCA 2007)

(56) What about *being* an oceanographer? (COCA 1999)

(57) ANNOUNCER: Questions about her career and her future plans WALTERS: What about *being* an ambassador? Mrs. THATCHER: Well, I'm not trained to be an ambassador. (COCA 1991)

(58) What about *having* the potato in the steak, instead of French fries on the side? (COCA 2015)

(59) What about *becoming* a poet? (COCA 2012)

(60) What about *becoming* more aware of societies' perceptions of women? (COCA 1991)

Infinitive complement clauses with non-action verbs

(61) Where was he? He had promised to *be* home for dinner tonight. (COCA 2015)

(62) [T]he president entered the Senate and asked to *know* the reasons for rejecting his nomination. (COCA 2009)

Why not V_{INF} *[...]* with non-action verbs

(63) Why not *be* good corporate citizens? (COCA 2011)

(64) Why not *be* idealistic? (COCA 2000)

(65) Why not *believe* them? They are the traffic experts […]. (COCA 2000)

(66) Why not *become* a lifetime supporting member of the site with a one-time donation of any amount? (GloWbE)

How to V_{INF} *[...]* with non-action verbs

(67) How to *be* happy. (COCA 2015)

(68) How to *be* good. (COCA 2001)

(69) How to *know* how much to eat? (COCA 2002)

For reasons of space, we limit our analysis to two examples of non-action verbs in Action constructions. Consider first the well-known ancient Greek aphorism γνῶθι σεαυτόν (*gnōthi seauton*), whose English translation in (48) is repeated in (70):

(70) Know thyself.

Know is a mental-state verb and, given the directive illocutionary force of imperatives, a conceptual conflict arises between the propositional content of the imperative, which expresses a future *action* to be performed by the addressee of the speech act, and the *stative* meaning of the verb. Despite this conceptual discrepancy, *know* can be used in imperatives in English; and this usage is by no means exceptional – there are hundreds of examples in the American English online corpus COCA. How can these conflicting meanings, i.e. the construction meaning and the lexical meaning be reconciled? A simple but appealing solution to this problem is to interpret *know* as the *resultant* mental state of a cognitive action. What is overtly coded linguistically is merely the effect of this mental action, viz. *know*; the action that leads to this result remains implicit. More generally, there exists a highly productive metonymic principle in English that can be notated as:

(71) $[\text{STATE}]_S \rightarrow [\text{ACTION RESULTING IN } [\text{STATE}]_S]_T$

It is interesting to compare the English translation of the Greek aphorism with its rendition in German:

(72) a. Erkenne dich selbst. (literally: ‘Get to know yourself’)
b. *Wisse dich selbst. (‘literally: ‘Know yourself’)

In German, the literal equivalent of English *Know yourself/thyself* as in (72b) is not possible (the asterisk marks unacceptability); instead a more *dynamic* predicate such as *sich selbst erkennen* ‘get to know oneself’, an ACCOMPLISHMENT (in the terminology of the linguistic philosopher Zeno Vendler 1957) is used, which expresses a mental or perceptual action. To put it negatively, the metonymy (71) is not exploitable, at least as far as the stative verb *wissen* ‘know’ is concerned. The contrast between English and German observed here is indicative of the more general phenomenon of cross-linguistic differ-

3
The abbreviation *GloWbE* stands for *Corpus of Global Web-Based English* (1.9 billion words), a corpus that covers 24 varieties of English (http://corpus.byu.edu/dialects.asp).

ences in the *exploitation* of metonymy (see e.g. Panther 2015 and the references therein).

As a second example of conceptual conflict between constructional meaning and lexical meaning, consider (67), the title of a book by L. Hoggard published in 2005, which is repeated in (73):

(73) How to be happy.

The meaning of (73) can be paraphrased roughly as 'The author offers his readership information about how they can achieve happiness'. Figure 7 diagrams the conceptual clash between the meaning of the construction, which designates an ACTION$_R$ to be performed by the reader *R*, and the meaning of *happy*, i.e. the reader's prospective mental state STATE$_R$. The resolution of this semantic conflict is achieved by a process of aspectual *coercion* (see e.g. Michaelis 2004); i.e., the actional construction meaning *coerces* the stative meaning of *happy* into an ACTION sense. The first step towards this target meaning is a (metonymically induced) reinterpretation of *happy* as a RESULTANT STATE$_R$. In the second and final step, this RESULTANT STATE is interpreted as the effect of the reader's ACTION$_R$ (or a series of actions). This target meaning is perfectly congruent with the meaning of the ACTION sense of the construction.

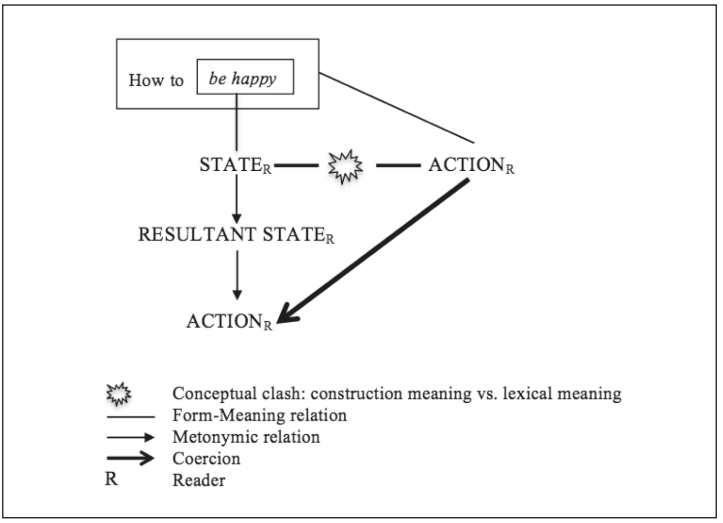

Figure 7. Metonymic coercion

In conclusion, it is important to note that the possibility of harmonizing constructional meaning and lexical meaning is not just a matter of language, but rather crucially depends on the language users' folk or cultural models. As for happiness, people have divergent views on whether it can be achieved intentionally by a series of actions or whether happiness is "in the genes", i.e. a state of mind that cannot be brought about deliberately (see Panther and Thornburg 2000 on this topic).

5. Metonymy outside language

In this section, a case is made for the existence of cross-modal metonymies, i.e. metonymies that operate not only in natural language but also in other sign systems, such as the visual arts (see also Panther 2005: 24–30). In support of this claim, we present a conceptual metonymy that is at work in both language

and the visual arts. This metonymy relates the source meaning (PERCEPTUAL) APPEARANCE to the target meaning REALITY. Its grounding in a folk model of reasoning is humorously expressed in the following piece of abductive reasoning (the "duck test" (italics added):[4]

(74) If it *looks* like a duck, swims like a duck, and quacks like a duck, then it probably *is* a duck. (https://en.wikipedia.org/wiki/Duck_test)

In English, there exists a construction that routinely triggers the metonymy APPEARANCE → REALITY. The construction is called the *Percept Subject* construction in Panther and Thornburg (2009: 27–28) and is exemplified in (75) by a piece of spoken discourse from an American television channel (instances of the construction are italicized):

(75) Then you can see Kevin's eyes. *He looked worried*. *He* never *looked scared to me*. *He looked strong*, you know? *He – looked strong to me*. (COCA 2008)

The Percept Subject construction is diagrammatically represented in Figure 8.

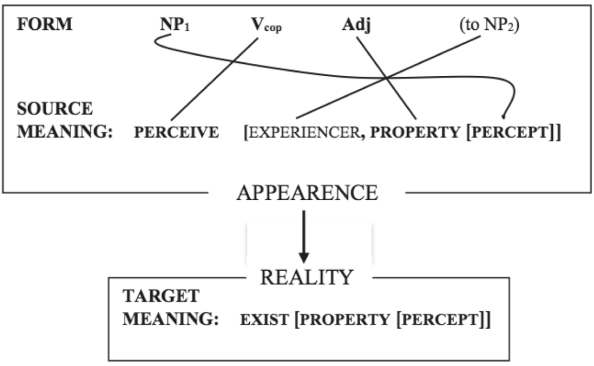

Figure 8. The *Percept Subject* construction and its metonymic extension

The first line of the upper rectangle of Figure 8 represents the syntactic structure (FORM) of the construction. The second line of the upper rectangle represents the (literal) meaning of the construction (SOURCE MEANING), which is notated in a simplified predicate calculus format. Lines connect the syntactic constituents to their respective meaning components: NP_1 to PERCEPT, V_{cop} to PERCEIVE, *Adj* to PROPERTY, and the optional prepositional phrase *to* NP_2 to EXPERIENCER.

In the italicized parts of (75), the PERCEPT is the referent of the pronoun *he* (= Kevin). The predicate consists of a copular verb of perception (*looks*) and an adjective denoting a psychological property (*worried*, *scared*, and *strong*). The optional argument of the Percept Subject construction is the EXPERIENCER argument, which is coded syntactically as *to me* in two sentences.

In general terms, the source meaning in Figure 8 expresses some state-of-affairs that *appears* to be the case, i.e. whose factuality has not been established. Yet, given that sensory experience, especially visual perception, is an important source of knowledge, a strong expectation is triggered by the construction meaning that the PROPERTY predicated of the PERCEPT actually holds in reality, i.e. *exists*. This target interpretation is notated in the lower rectangle of Figure

4
Heim (2007: 68) attributes this reasoning to the American poet James Whitcombe Riley (1849–1916), who is supposed to have said: "When I see a bird that walks like a duck and swims like a duck and quacks like a duck, I call that bird a duck."

8; it is induced by the metonymic inference APPEARANCE → REALITY. Thus, the following metonymic inferences hold for sentences (75):[5]

(76) a. He *looked* worried → He *is* worried
b. He never *looked* scared (to me) → He *was* never scared (in my opinion)
c. He *looked* strong → He *was* (mentally) strong
d. He – *looked* strong to me → He *was* (mentally) strong (in my opinion)

The metonymy APPEARANCE → REALITY is also exploited in languages other than English. For example, the sentence *You look tired* translates into German as *Du siehst müde aus* with the visual perception verb *aussehen* 'look (like)', and into French as *Tu as l'air fatigué* where the noun *air* has the denotatum 'appearence'.

Finally, the metonymy APPEARANCE → REALITY also plays a non-negligible role outside language, e.g. in the visual arts, as argued in Panther (2005). As an example, consider Figure 9, a portrait of a 15th century aristocratic woman, Ginevra de' Benci, painted by Leonardo da Vinci.

Figure 9. Leonardo da Vinci: *Ginevra de' Benci* (c. 1474/1478) [National Gallery of Art, Washington, D.C., NGA Images]

One Internet site characterizes the painting as follows (italics added):

(77) Unlike Leonardo's other portraits of women this lady *looks sulky*, *unforgiving* and *haughty*; this is emphasised by the slightly smaller cast of one eye, making her *look withdrawn.* Her left eye seems to gaze directly at us while the right looks beyond to some invisible point. (…) Maybe her expression *indicates* she was *not* entirely *happy* regarding her forthcoming marriage. (http://www.leonardodavinci.net/portrait-of-ginevra-de-benci.jsp)

It is clear that the writer regards the sulky, unforgiving, haughty, and withdrawn *look* of the portrayed lady's face as strong *indices* that she *is* actually sulky, unforgiving, haughty, and withdrawn. Furthermore, these mental states and character traits are assumed to be indications of another emotional state, viz. that Ginevra is "not entirely happy regarding her forthcoming marriage".[6]

From another analytical perspective, the perceptual attributes listed in (77) can also be seen as *links* in a causal chain (see Figure 10). The author of the portrait observes certain features of Ginevra's face: for example, she does not smile, her left eye is slightly smaller than her right eye, the latter looking "beyond [the viewer] to some invisible point". These physical features are perceived as symptoms of specific mental and emotional states such as the ones described in (77) (*sulky*, *unforgiving*, *haughty*, *withdrawn*). From there it is only one inferential step to the conclusion that these mental states are

not just perceived – they are *real*. In other words, the facial features observed by the viewer are *caused* by underlying existing mental and emotional states of the portrayed lady. What is at work here – both in the interpretation of natural language constructions and of a piece of visual art – is the high-level metonymy EFFECT → CAUSE. What is perceivable is the effect; the cause must be inferred. From the vantage point of the metonymy EFFECT → CAUSE, the target of the metonymy APPEARANCE → REALITY can be interpreted as CAUSE; in the underlying folk model, which is reflected in both natural language and the semiotics of visual art interpretation, APPEARANCE is conceived of as caused by REALITY.

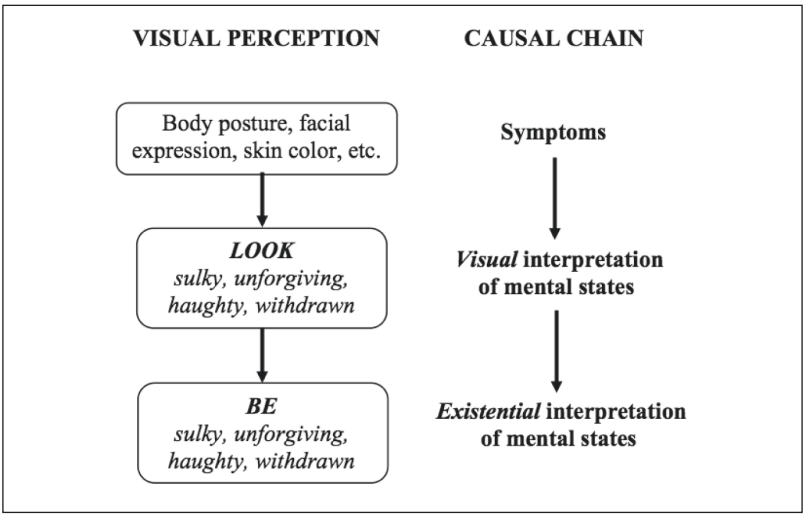

Figure 10. From symptoms to underlying causes: the metonymy EFFECT → CAUSE

6. In lieu of a conclusion

The focus of this contribution has been on the two tropes of metaphor and metonymy, which, in Cognitive Linguistics, are regarded not solely as figures of language, but, equally important, as figures of thought. Along with other cognitive linguists (e.g. Barcelona 2000; Radden 2002; Panther and Thornburg 2007), the present authors consider conceptual metonymy, i.e. associative thinking, as even more fundamental than metaphor. Metonymic reasoning is ubiquitous in natural language, but, as has been argued in section 5 of this contribution, metonymic thinking is also operative in other semiotic modes, e.g. in the interpretation of visual art.

Prima facie, the interpretation of metonymies could be regarded as a kind of "mind-reading", as understood in cognitive psychology, since the target sense of a metonymy is not overtly coded but is *implied* by the speaker and has to

5
Note that for reasons of simplicity the source meaning, which, as pointed out in section 3.3, is a conceptual part of the source meaning (see (10)), has not been incorporated into the target meaning of Figure 8.

6
An anonymous reviewer appears to attribute to us the idea that metonymy is the *only* relevant cognitive tool in the interpretation of visual art. We do not claim this, but merely want to demonstrate, by way of example, that metonymy is operative in other semiotic modes than language. We completely agree with the reviewer that the metonymic approach will not necessarily yield satisfactory results with works from other periods and/or styles in the history of the visual arts.

be *inferred* by the hearer. According to Deirdre Wilson (2005: 386) (see also Sperber and Wilson 2002):

"… mind-reading is not a single homogeneous module but a set of special-purpose mechanisms or submodules (…) these may include a dedicated comprehension mechanism, an evolved *mental organ* with its own special purpose principles or procedures."

We hope to have presented some evidence in this contribution that metonymic reasoning is not a "dedicated comprehension mechanism", but rather a cognitive tool, which provides all-purpose inference schemas that are applied inside and outside language.

Acknowledgments

The first version of this contribution was presented at the international conference *25th Days of Frane Petrić* on the beautiful island of Cres (September 25–28, 2016), a symposium that thematically focused on *Language and Cognition*. We would like to thank the Croatian Philosophical Society for giving us the opportunity to present our views on Cognitive Linguistics – in particular, Professor Milena Žic Fuchs, who suggested us as presenters, Professor Igor Mikecin, who invited us on behalf of the Philosophical Society, Professor Mislav Ježić, with whom we had stimulating discussions about the role of metaphor in Vedic texts and who gave us good advice on our planned trip to India, and Dr. Ljudevit Fran Ježić, who took good care of us during our stay and was our contact person during the publication process. Finally, we are grateful to two anonymous reviewers for their constructive criticism of the first draft of this article, which we hope has led to a better product. Remaining errors are of course our responsibility.

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Klaus-Uwe Panther, Linda L. Thornburg

Metafora i metonimija u jeziku i mišljenju: kognitivnolingvistički pristup

Sažetak

Kognitivna lingvistika naziv je koji pokriva raznolike funkcionalističke pristupe istraživanju jezika koji su se pojavili 1970-ih godina i koji dijele stanovite temeljne teorijske i metodološke zasade, od kojih većina nije kompatibilna s teorijom Noama Chomskoga i njenim novijim ograncima. Kognitivna lingvistika razlikuje se od generativne gramatike u tome što: 1) odbacuje Chomskijevu tvrdnju da je jezična moć urođena, 2) naglašuje semiotički značaj ne samo riječi nego i gramatičkih konstrukcija kao značenjskih jedinica u jeziku, 3) pripisuje važnu kognitivnu i jezičnu ulogu metafori i metonimiji, i 4) tvrdi da su jezične strukture i uporaba (relativno) motivirani pojmovnim i pragmatičkim čimbenicima. Rad se usredotočuje na točke 2), 3) i 4), koje se empirijski potkrjepljuju jezičnim primjerima iz engleskoga.

Ključne riječi

kognitivna lingvistika, generativna gramatika, gramatičke konstrukcije, jezik i mišljenje, metafora, metonimija, motivacija

Klaus-Uwe Panther, Linda L. Thornburg

Metapher und Metonymie in Sprache und Denken: ein kognitiv-linguistischer Ansatz

Zusammenfassung

Der Terminus Kognitive Linguistik (KL) ist ein Sammelbegriff für funktionalistische und kognitivistische Sprachtheorien, die in den 1970er-Jahren entstanden und mit der generativen Grammatik Chomskys und ihrer Weiterentwicklung vielfach unvereinbar sind. Grundannahmen der KL sind u. a.: (i) Die menschliche Sprachfähigkeit ist nicht angeboren, sondern durch das Wirken genereller kognitiver Lernmechanismen erklärbar. (ii) Sprachliche Einheiten – einschließlich morphosyntaktischer Konstruktionen – sind Zeichen. (iii) Die Metapher und die Metonymie spielen eine zentrale Rolle im Prozess der sprachlichen und kognitiven Bedeutungskonstitution. (iv) Sprachstruktur und Sprachgebrauch sind zumindest partiell motiviert. Der Artikel diskutiert die Punkte (ii), (iii) und (iv), die durch authentische englischsprachige Sprachdaten erläutert und empirisch gestützt werden.

Schlüsselwörter

Kognitive Linguistik, Generative Grammatik, morphosyntaktische Konstruktionen, Sprache und Denken, Metapher, Metonymie, Motivation

Klaus-Uwe Panther, Linda L. Thornburg

La métaphore et la métonymie dans le langage et la pensée : une approche cognitive

Résumé

La linguistique cognitive (LC) est un ensemble de théories fonctionnalistes et cognitivistes qui ont émergé dans les années 1970 et qui, à de nombreux égards, sont incompatibles avec la grammaire générative. Les hypothèses de base de LC sont, entre autres : (i) LC réfute l'hypothèse de Chomsky selon laquelle la faculté du langage est innée. (ii) LC souligne le caractère sémiotique des unités grammaticales, y compris des signes complexes tels que des constructions morphosyntaxiques. (iii) LC considère la métaphore et la métonymie non seulement comme des façons de parler, mais, en outre, comme des figures de pensée. (iv) LC soutient que les structures grammaticales d'une langue sont motivées en grande partie par des facteurs conceptuels et pragmatiques. L'article porte surtout sur les points (ii), (iii) et (iv), qui sont élaborés et illustrés avec des données de langue anglaise.

Mots-clés

linguistique cognitive, grammaire générative, constructions morphosyntaxiques, langage et pensée, métaphore, métonymie, motivation