

A Cognitive Perspective on Metaphor and Metonymy: Theoretical Frameworks, Mechanisms, and Embodied Cognition

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In the realm of modern linguistics, the shift from viewing figurative language as a mere stylistic ornament to recognizing it as a fundamental cognitive process has revolutionized our understanding of human thought. The cognitive approach to **metaphor** and **metonymy** posits that these mechanisms are not just rhetorical devices used by poets and orators, but are essential tools that allow human beings to structure their conceptual systems. By mapping well-understood physical experiences onto abstract domains, the human mind navigates complex realities through the lens of familiar, often bodily, interactions. This article provides a high-level technical analysis of the cognitive linguistic frameworks surrounding metaphor and metonymy, exploring their structural differences, interactive nature, and practical implications in fields ranging from translation theory to artificial intelligence.

The Theoretical Foundation: Conceptual Metaphor Theory (CMT)

The contemporary study of these phenomena was catalyzed by Lakoff and Johnson's seminal work, *Metaphors We Live By* (1980). They argued that our conceptual system is pervasively structured by metaphor. In this framework, a **metaphor** is defined as a cross-domain mapping where properties from a **Source Domain** (usually concrete and sensorimotor-based) are mapped onto a **Target Domain** (usually abstract and complex).

For example, in the conceptual metaphor **ARGUMENT IS WAR**, the vocabulary of physical combat (attack, defend, strategy, target, retreat) is mapped onto the abstract process of verbal disagreement. This isn't just a way of speaking; it governs how we act. We don't just talk about arguments in terms of war; we actually perceive the process of arguing as a struggle for dominance. The technical mapping follows a set of correspondences:

- Source Domain (War): Physical Attack ! Target Domain (Argument): Verbal Criticism.
- Source Domain (War): Defense ! Target Domain (Argument): Counter-arguments.
- Source Domain (War): Victory/Defeat ! Target Domain (Argument): Winning or losing the debate.

The cognitive approach emphasizes **Unidirectionality**: mappings typically move from the concrete to the abstract, never the reverse. We use our knowledge of physical travel to understand time (TIME IS A JOURNEY), but we rarely use our understanding of time to explain the physical mechanics of walking.

Defining Conceptual Metonymy: The Intra-Domain Mapping

While metaphor involves mapping across two distinct domains, **metonymy** operates within a single **Idealized Cognitive Model (ICM)** or domain. Metonymy is a stand-for relation where one entity (the vehicle) provides mental access to another entity (the target) within the same conceptual domain. This is primarily a referential function, though it also carries predictive and explanatory weight.

Consider the example: "*The White House issued a statement.*" Here, the building (the vehicle) stands for the executive administration (the target). Both entities exist within the same domain of "Governmental Operations." Unlike metaphor, which relies on **Similarity**, metonymy relies on **Contiguity** or conceptual proximity. Common metonymic patterns include:

- PRODUCER FOR PRODUCT: "I'm reading Lakoff" (Reading the book written by Lakoff).
- PLACE FOR INSTITUTION: "Wall Street is in a panic" (The financial markets).
- PART FOR WHOLE (Synecdoche): "We need more hands" (Manual laborers).
- CONTAINER FOR CONTENT: "He drank the whole bottle" (The liquid inside).

Technical Comparison: Metaphor vs. Metonymy

Understanding the distinction between these two mechanisms requires a structural analysis of their mapping types. The following table summarizes the core differences as defined in cognitive linguistics.

Feature	Conceptual Metaphor	Conceptual Metonymy
Domain Relationship	Cross-domain (Inter-domain) mapping.	Intra-domain (within the same ICM).
Basis of Mapping	Similarity or Correlation.	Contiguity or Proximity.
Primary Function	Understanding/Structuring a target domain.	Referential/Providing mental access.
Mapping Nature	Involves a set of structural correspondences.	Involves a single point of reference.
Cognitive Effort	High; requires blending multiple conceptual spaces.	Medium; requires navigating an existing domain.

Embodied Cognition: The Human Body as a Cognitive Tool

A central tenet of the cognitive approach is that metaphor and metonymy are **embodied**. Human beings use their bodies to interact with the physical environment, and these interactions form the basis of our conceptual scaffolding. The human body is perhaps the most significant source domain for understanding abstract concepts.

Image Schemas are the bridge between physical experience and cognitive structure. These are recurring dynamic patterns of our perceptual interactions and motor programs. Common schemas include **CONTAINER**, **PATH**, **BALANCE**, and **FORCE**. For example, the BODY IS A CONTAINER metaphor allows us to process emotions as physical substances inside us ("He was filled with rage," "She poured her heart out").

Case Study: Metonymy and Metaphor in Body Parts

The use of body parts in language often starts as a metonymy and evolves into a metaphor. Consider the "Heart":

1. Metonymy: The heart is physically associated with increased heart rate during emotion. Thus, THE HEART FOR THE EMOTION is a metonymy based on physiological contiguity.
2. Metaphor: Once the heart is established as the seat of emotion, we develop metaphors like "A cold heart" or "A heavy heart." Here, physical temperature or weight is mapped onto the quality of the emotion.

This interaction is often termed **Metaphonymy**, a concept introduced by Goossens (1990) to describe the seamless integration where a metonymic expression serves as the basis for a metaphorical extension.

Technical Analysis of Metaphorical Mapping Functions

To analyze metaphor from a technical or computational perspective, we can represent the mapping as a function between two sets of conceptual nodes. Let S be the Source Domain and T be the Target Domain.

A mapping M is a partial function $M: S \rightarrow T$ where a subset of elements in S (features, relations, and logic) are projected onto T . However, not all features are mapped. This is known as **Invariant Principle**. Only the part of the source domain that is consistent with the image-schematic structure of the target domain is projected.

Formulaic Representation:

$$S = \{s_1, s_2, \dots, s_n\} \text{ and } T = \{t_1, t_2, \dots, t_m\}$$

where $s_i \in S$ and $t_j \in T$. The mapping M is defined as:

$$M: S \rightarrow T \text{ such that } M(s_i) = t_j \text{ if and only if the structural integrity of } s_i \text{ preserves the topological properties required by } t_j.$$

This mathematical view is crucial for **Natural Language Processing (NLP)**. For an AI to understand the sentence

"The economy is stumbling," it must recognize that *Economy* (T) is being mapped to *Biological Organism/ Locomotion*(S). The AI must identify that "stumbling" implies a lack of stability and progress, rather than a literal physical trip over an object.

The Interaction of Metaphor and Metonymy: Conceptual Integration

Recent developments in **Conceptual Blending Theory** (Fauconnier and Turner) suggest that metaphor and metonymy are often components of more complex "blended spaces." Instead of a simple two-domain mapping, we often have four spaces:

- Two Input Spaces: The Source and Target.
- A Generic Space: Containing the abstract structure common to both.
- A Blended Space: Where the actual cognitive processing happens, creating emergent structure not present in either input.

In a "blended" analysis, metonymy often acts as the trigger that activates a specific input space. If we say "The crown is struggling with the press," the metonymy (Crown for Monarchy) activates the input space of 'Royalty,' which then participates in the metaphorical blend of 'Struggling' (Physical Conflict mapped to Social Tension).

Practical Implementation: Identifying Cognitive Tropes in Text Analysis

For technical writers, linguists, or data scientists, identifying these patterns requires a systematic procedure. The following workflow is used in **Corpus Linguistics** to extract and analyze cognitive metaphors.

Step-by-Step Identification Procedure (MIP - Metaphor Identification Procedure)

1. Read the entire text: Establish a general understanding of the context.
2. Determine lexical units: Break the text into individual words or phrases.
3. Establish contextual meaning: Determine how the word is used in the specific sentence.
4. Check for basic/concrete meaning: Determine if the word has a more basic, concrete, or bodily-related meaning in other contexts.
5. Compare meanings: If the contextual meaning contrasts with the basic meaning but can be understood in comparison to it, mark the word as metaphorical.

Metaphor and Metonymy in Translation Theory

Translation is not merely the replacement of words but the mapping of conceptual systems across cultures. A cognitive approach to translation explains why literal translations often fail. Since metaphors are grounded in culture-specific experiences or environmental interactions, a source-domain in Language A might not exist or might have different connotations in Language B.

Translation Strategies Matrix

Strategy	Description	Risk Level
Metaphor to Metaphor	Translating a source metaphor into an equivalent target metaphor.	Low (if conceptual domains match).
Metaphor to Simile	Softening the mapping by using "like" or "as" to aid comprehension.	Medium (loss of impact).
Metaphor to Sense	Paraphrasing the metaphorical meaning into literal language.	High (loss of cognitive depth).
Metonymy preservation	Keeping the referential stand-for relation.	Variable (depends on cultural contiguity).

Troubleshooting and Challenges in Cognitive Analysis

When performing a cognitive analysis of metaphor and metonymy, researchers often encounter several operational challenges. Addressing these is vital for maintaining technical accuracy.

1. The Problem of Dead Metaphors

Expressions like "the leg of the table" or "the foot of the mountain" are often called "dead metaphors" because speakers no longer perceive the cross-domain mapping. However, from a cognitive linguistics perspective, these are **fossilized** but still conceptually active. The challenge lies in determining whether a trope is being processed actively or retrieved as a fixed lexical unit.

2. Domain Boundary Ambiguity

The distinction between metaphor (two domains) and metonymy (one domain) is not always clear-cut. This is known as the **Domain Problem**. For example, is "The brain" for "The person" a metonymy (part for whole) or a metaphor (mapping the organ of thought to the identity)? **Solution:** Focus on the primary cognitive function. If the intent is to point to a specific person in a crowd, it is referential (metonymy). If the intent is to highlight the person's intelligence as a quality, it moves toward metaphor.

3. Cultural Specificity vs. Universalism

While many metaphors are near-universal due to shared human biology (e.g., HAPPY IS UP), many are strictly cultural. Analysts must avoid projecting Western-centric source domains onto non-Western languages without empirical corpus evidence.

Broader Implications and Future Directions

The cognitive approach to metaphor and metonymy extends far beyond linguistics. In **Psychology**, it provides insight into the unconscious mind, suggesting that our deepest fears and desires are structured through these same mappings. In **Cognitive Science**, it informs the development of neural networks that attempt to simulate human-like reasoning. If an artificial intelligence is to truly understand human language, it cannot simply rely on statistical word associations; it must model the image-schematic structures and cross-domain mappings that define human experience.

As we move further into the digital age, the proliferation of new source domains—such as those related to computing and virtual reality—is already beginning to structure our understanding of traditional fields. We talk about

"rebooting" an economy or "downloading" information during a lecture. These new metaphors will continue to evolve, reflecting the ever-changing nature of the human interaction with the world. The study of metaphor and metonymy remains a vital window into the architecture of the human mind, proving that our capacity for abstract thought is inextricably linked to our physical existence in the world.

Ultimately, the cognitive framework demonstrates that human conceptual systems are not cold, logical engines, but are imaginative, vibrant structures. By understanding how we map the known onto the unknown, we gain a clearer view of the links in the human mind and how those links are cognitively represented, processed, and articulated across all forms of human communication.

Baca Juga (Artikel Terkait)

- [A Contrastive Linguistic Analysis of Death Metaphors: A Comparative Study in English and Chinese Cognitive Semantics](http://alaskawriters.com/contrastive-study-death-metaphors-english-chinese-cognitive-semantic.pdf)

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