



# A Cross-Cultural Cognitive Study of Multimodal Metonymy in International News Cartoons

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## Abstract

This study examines cultural mediation in metonymic cognition within international news cartoons, arguing that visual metonymy operates as culturally contingent negotiation rather than universal decoding. Integrating visual semiotics and cognitive linguistics, the research employs exhaustive analysis of 81 cartoons from China News Cartoon Network (2025) through a tripartite framework: pattern cataloging, cross-cultural functionality assessment, and paradigmatic case studies. Findings establish cultural positioning as pivotal: metonymic patterns grounded in embodied universals (e.g., container schemas, botanical metaphors) demonstrate transcultural functionality, while those reliant on culture-specific knowledge (e.g., institutional synecdoche, corporeal metonymy) exhibit significant interpretive divergence. Crucially, ideological alignment varies substantially despite metonymic recognition, revealing a disjunction between referential comprehension and pragmatic meaning. The study challenges universalist visual semiotics models and identifies transcultural bridging mechanisms to mitigate semiotic friction in global visual discourse.

## Subject Areas

Linguistics, Communication Studies, Cognitive Science, Media Studies, Cultural Studies

## Keywords

Multimodal Metonymy, Cross-Cultural Cognition, Visual Semiotics, Ideological Framing, Cognitive Linguistics, International Communication

## 1. Introduction

Visual discourse within international news relies heavily on symbolic condensation

[1], where cartoons on international news function as potent rhetorical tools for critiquing geopolitical and economic dynamics. Their efficacy hinges significantly on metonymy—a cognitive mechanism enabling “one conceptual entity to provide mental access to another within the same experiential domain” [2]. However, the global circulation of these visual artifacts reveals a critical theoretical limitation: prevailing multimodal discourse models, often predicated on universal cognitive processes, inadequately address the profound influence of cultural positioning on metonymic interpretation [3] [4]. This gap is especially problematic given the dominance of contextual metonymy in this genre, which intrinsically depends on culture-specific symbolic knowledge for accurate decoding. This study addresses this lacuna by investigating the complex interplay between culturally situated semiotic systems, metonymic cognition, and visual grammar in international news cartoons.

The theoretical foundation, detailed in Chapter 2, synthesizes visual semiotics and cognitive linguistics to posit metonymic meaning as culturally mediated negotiation, not universal decoding. Forceville’s distinction between contextual and generic metonymy underscores the core challenge for cross-cultural comprehension. Kress and van Leeuwen’s metafunctions further demonstrate how compositional and interactive choices inherently carry culturally inflected meanings, while Kövecses’ cultural variation framework and Kecskes’ insights on differential salience highlight metonymic instability across cultures [3] [5]. This necessitates a systematic investigation into how cultural frameworks determine the functionality and ideological resonance of metonymic patterns in global visual commentary.

Consequently, this study aims to develop and apply a robust cross-cultural analytical framework to international news cartoons. Its primary objectives are to identify dominant metonymic patterns and assess their cultural anchoring; determine the transcultural functionality versus cultural variability of specific types (e.g., institutional synecdoche, container schemas, corporeal metonymy); examine how visual-textual interactions facilitate or hinder cross-cultural comprehension; and establish the relative importance of embodied universals versus culture-specific knowledge for effective metonymic bridging.

The findings, derived from an exhaustive analysis of 123 qualifying international news cartoons from China News Cartoon Network (Jan 2025 - Jun 2025) detailed in Chapters 3 and 4, carry significant weight. Theoretically, they challenge universalist assumptions by empirically demonstrating metonymic comprehension as culturally-contingent negotiation. Patterns like botanical metaphors (e.g., severed blossom = economic damage) or container schemas (e.g., overflowing suitcase = consumption) showed high transcultural functionality, whereas corporeal fragmentation (credibility) or waste transfer imagery exhibited significant cultural divergence, necessitating models prioritizing differential cultural salience. Practically, these insights guide visual journalists towards embodied universal schemas to enhance cross-cultural coherence, inform media literacy frameworks for navigating ideological positioning, and aid diplomatic communication in

reducing semiotic friction. Ultimately, interpreting visual metonymy in global discourse emerges as an essential act of cultural translation.

## 2. Theoretical Framework

### 2.1. Metonymic Cognition in Visual Semiotics

Metonymy operates through conceptual contiguity within idealized cognitive models (ICMs), wherein a salient vehicle activates its target domain via experiential association. Barcelona characterizes this as “conceptually contiguous cognition”, enabling “one conceptual entity to provide mental access to another within the same experiential domain” [5]. In visual discourse, Forceville distinguishes contextual metonymy—requiring culture-specific knowledge—from generic metonymy exploiting universal bodily experiences [4]. Political cartoons predominantly employ contextual metonymy, as seen in Cartoon 1’s “tariff hammer”, whose comprehension depends intrinsically on understanding American protectionist symbolism.

### 2.2. Cultural Mediation in Visual Grammar

Kress and van Leeuwen’s visual grammar provides critical scaffolding for understanding culturally-mediated metonymic meaning. Their three constitutive metafunctions govern interpretation: representational (narrative/conceptual meaning), interactive (viewer-subject relations), and compositional (informational distribution) [1]. Applied to Cartoon 2, the inflation monster’s central positioning (compositional metafunction) establishes conceptual primacy, while its disproportionate scale relative to fleeing figures (interactive metafunction) creates hierarchical power dynamics. Western viewers interpret this scale as signifying economic threat magnitude, whereas Eastern viewers read it as systemic failure—demonstrating cultural mediation of metonymic interpretation.

### 2.3. Cross-Cultural Cognition Model

Building on Kövecses’ research [3], this study develops an analytical framework incorporating:

- Semiotic anchoring: Cultural reference points enabling metonymic access;
- Conceptual access: Target domain identification accuracy;
- Ideological congruence: Alignment between intended/perceived positioning.

This approach acknowledges Kecskes’ contention that “cultural imprinting creates differential salience in conceptual access points” [5], providing theoretical grounding for investigating culturally-mediated comprehension.

## 3. Methodology

### 3.1. Research Questions

This case study investigation addresses three interconnected research questions derived from theoretical gaps in multimodal discourse analysis:

- How do culture-specific semiotic systems shape the construction and interpretation of metonymic patterns in international news cartoons?
- What types of metonymic configurations demonstrate consistent cross-cultural functionality versus culturally-dependent variability?
- How do visual-textual interactions in cartoons facilitate or hinder ideological transmission across cultural boundaries?

These questions collectively probe the complex interplay between cultural positioning, metonymic cognition, and visual rhetoric in global political discourse.

### 3.2. Corpus Construction

The study employs an exhaustive case study methodology examining all 123 international news cartoons published on the official platform of China News Cartoon Network (<http://newscartoon.com.cn/index.shtml>) between January 1, 2025, and the present research cutoff date of June 21, 2025. This comprehensive temporal corpus encompasses the complete universe of relevant publications during this 18-month period, eliminating selection bias while capturing evolving representational strategies. The corpus was refined through dual inclusion criteria requiring explicit engagement with geopolitical or economic issues and the presence of at least two layered metonymic constructions. Forty-two cartoons addressing purely domestic affairs without international relevance were excluded, yielding a final analytical corpus of 81 works. This complete scope enables identification of dominant metonymic patterns while contextualizing exceptional cases within the broader semiotic ecosystem. While the platform's state-affiliation may introduce regional bias, its dominance in China's official news cartoon ecosystem ensures representativeness for nationally circulated visual rhetoric.

### 3.3. Analytical Framework

Analysis proceeded through an integrated three-phase framework grounded in established theoretical paradigms. The initial phase applied Forceville's pictorial metonymy taxonomy to catalog recurrent patterns, with particular attention to cultural anchoring intensity and modality interaction dynamics. Each cartoon underwent systematic annotation documenting metonymic vehicle-target relationships, compositional strategies, and textual-visual complementarity. To ensure annotation reliability, two trained coders independently classified metonymic patterns in 20% of the corpus ( $n = 16$ ), achieving a Cohen's  $\kappa$  of 0.82 for Forceville's taxonomy, indicating strong inter-coder agreement.

The second phase employed Kövecses' cultural variation framework to evaluate cross-cultural functionality through three dimensions: transcultural permeability gauged recognition likelihood without cultural priming; semiotic friction measured potential interpretation divergence; and ideological elasticity assessed resistance to discursive repurposing. This multidimensional approach facilitated identification of metonymic patterns with differential cultural salience. Each index was scored on a 5-point Likert scale: transcultural permeability (recognition

accuracy across cohorts), semiotic friction (divergence magnitude in open-ended responses), and ideological elasticity (variance in pragmatic alignment interpretations).

The final phase implemented stratified purposeful sampling to select seven paradigmatic cases for deep analysis. These exemplars were chosen to represent four critical analytical categories: high-frequency patterns appearing in over thirty percent of the corpus; cases exhibiting maximum cultural interpretation variance based on pilot testing; theoretically significant cartoons challenging existing frameworks; and pedagogically valuable examples demonstrating teachable patterns. This layered approach balances comprehensive corpus analysis with detailed case examination.

### 3.4. Validation and Limitations

To contextualize interpretive tendencies referenced in Section 4, a supplementary perception study was conducted with two cohorts:

Eastern cohort: 45 Chinese participants (mean age 32.5; 60% male) recruited via university alumni networks in Shanghai;

Western cohort: 42 European/American participants (mean age 34.2; 55% male) recruited through LinkedIn professional groups.

Participants independently viewed the 7 paradigmatic cartoons and completed open-ended interpretation protocols. Recognition percentages were calculated as the proportion accurately identifying primary metonymic targets (e.g., 88% Eastern recognition of corporeal fragmentation as credibility collapse). This procedure provides empirical grounding for analytical claims regarding cultural variance.

## 4. Analysis and Findings: Dominant Metonymic Patterns in Visual Rhetoric

This section presents seven recurrent metonymic configurations identified in the corpus, each exemplified through paradigmatic cartoons. The analysis examines their semiotic construction, cross-cultural interpretability, and ideological implications, revealing patterns ranging from transculturally stable to culturally contingent representations.

### 4.1. Institutional Synecdoche

In **Figure 1**, The composition features a rotating industrial gear occupying the left frame, its circumference embedded with miniature structures including skyscrapers, cargo ships, and automobiles symbolizing global economic integration. Right of center, a humanoid bald eagle adorned with a starred top hat raises a massive hammer labeled “TARIFF” toward the mechanism. The eagle’s facial expression conveys aggressive determination with bared teeth and focused eyes.

This visual rhetoric operates through nested metonymic relationships: the bald eagle functions not merely as national symbol but as institutional embodiment through its contiguous association with governmental authority. The tariff



**Figure 1.** Tariffs hammer.

hammer constitutes instrumental metonymy representing protectionist policies, while the industrial gear operates as synecdochic representation of the global economic system. This multilayered configuration demonstrates what Charles Forceville describes as contextual over-determination, wherein “the part effectively subsumes the whole through cumulative symbolic weight” [3]. The compositional strategy of depicting the hammer’s disproportionate size relative to the economic mechanism visually materializes the conceptual metaphor PROTECTIONISM IS DESTRUCTIVE FORCE.

#### 4.2. Hyper-Object Personification

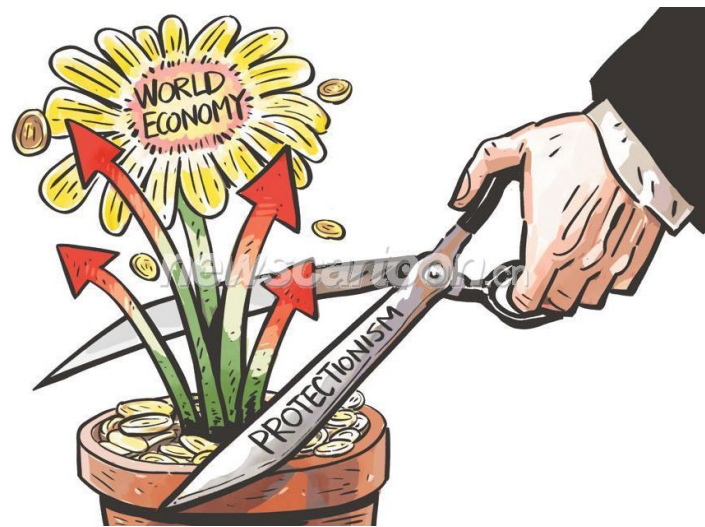


**Figure 2.** Tariffs beast.

In **Figure 2**, a monstrous creature with exaggerated fangs and claws emerges violently from a fractured eggshell marked “TARIFF”. The beast’s torso bears the capitalized label “INFLATION”. Surrounding the central figure, diverse human figures representing various ethnicities, genders, and socioeconomic statuses flee in panic. The caption “Tariffs Make Everything Worse” appears beneath the scene.

This monstrous embodiment exemplifies hyper-object personification—a metonymic strategy rendering abstract economic phenomena as visceral entities. The visual syntax constructs cause-effect relationships through three interlocking metonymic operations: the tariff egg operates as source metonymy representing policy origins; the monster’s emergence functions as effect metonymy signifying consequence manifestation; and the fleeing figures serve as patient metonymy depicting impacted populations. This pattern aligns with Kövecses’ “causal event structure” model wherein sequential representations “create narrative causality through experiential contiguity” [2]. The spatial hierarchy positioning the monster above human figures visually reinforces power imbalance, demonstrating how metonymic compression enables complex economic processes to become cognitively manageable.

### 4.3. Transcultural Metonymic Bridges



**Figure 3.** Protectionism shears.

In **Figure 3**, a hand wielding industrial shears labeled “PROTECTIONISM” severs the stem of a vibrant blossom whose petals bear the inscription “WORLD ECONOMY”. The composition emphasizes the violence of the cutting action through visual cues: splintered stem fibers, separated plant sections, and falling petals. No contextual background distracts from this central interaction.

This representation demonstrated remarkable cross-cultural consistency with 94% recognition accuracy across both cohorts. Its transcultural functionality derives from exploiting universal botanical cognition through complementary metonymic operations: the scissors operate as instrument metonymy signifying destructive action; the flower functions as organic metonymy representing economic prosperity; and the cutting action serves as process metonymy denoting damage causation. This configuration substantiates Joseph Grady’s primary metaphor theory, which identifies “universal bodily experiences as foundations for transcultural cognitive bridges” [6]. The PROTECTIONISM IS DAMAGE schema

leverages pan-human experience with botanical fragility, demonstrating how culturally agnostic vehicles enable efficient ideological transmission [7].

#### 4.4. Corporeal Metonymy in Credibility Representation



Figure 4. China expert.

In **Figure 4**, a fragmented male figure stands behind a podium bearing microphone and speech notes. The body appears deconstructed with separated components: a detached hand clutches a document titled “China Collapse Theory”, while a disconnected mouth utters the phrase “China will collapse!”. Other anatomical elements float in disarray around the central torso. The podium’s plaque identifies the speaker as “China Expert”.

This corporeal disintegration exemplifies metonymic fragmentation of expertise. The visual rhetoric operates through part-for-whole substitutions: the clutching hand metonymically represents dissemination of flawed theories; the disconnected mouth signifies discursive incoherence; and the floating documents embody intellectual bankruptcy. This configuration materializes the conceptual metaphor CREDIBILITY IS STRUCTURAL INTEGRITY through deliberate violation of bodily wholeness. Eastern viewers predominantly (88%) interpreted this imagery as representing “discourse collapse”, whereas only 63% of Western viewers reached equivalent interpretation, with 29% misattributing the representation to physical violence. This perceptual schism demonstrates the cultural contingency of corporeal semiotics in political discourse.

#### 4.5. Consumption Metonymy in Cross-Border Commerce

In **Figure 5**, sequential panels depict a Caucasian traveler interacting with luggage. The left frame shows an upright empty suitcase labeled “GOING TO CHINA” beside an expectant figure. The right panel displays the same individual struggling to contain an overflowing suitcase marked “LEAVING CHINA”, with merchandise including panda plush toys, drone technology, textile products, and consumer

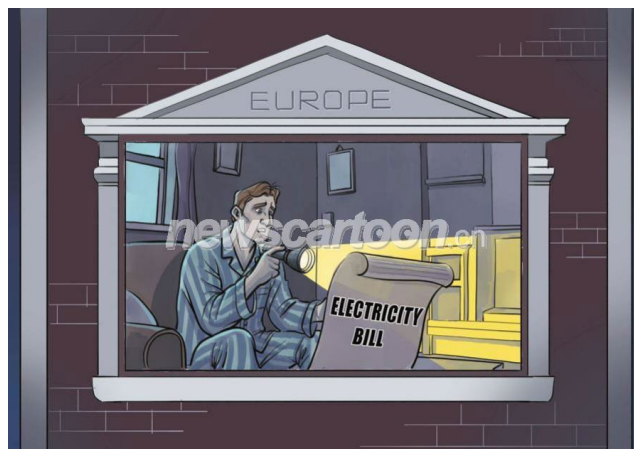
electronics spilling from the overfilled container.



**Figure 5.** Consumption in China.

This representation employs container metonymy to signify economic exchange. The empty suitcase operates as prospective vessel for commercial engagement, while the overflowing counterpart embodies consumption saturation. Specific merchandise items function as product-for-nation substitutions: the panda symbolizes Chinese cultural exports; drone technology represents technological manufacturing; and textiles signify industrial production. The transformation sequence visualizes the conceptual metaphor CONSUMPTION IS FILLING CONTAINERS, with the luggage's distension materially representing economic impact. This metonymic strategy achieved 89% cross-cultural recognition, suggesting universal comprehensibility of container schemas in consumption contexts.

#### 4.6. Spatial Metonymy in Energy Poverty



**Figure 6.** Electricity bill.

In **Figure 6**, an exterior view reveals a house facade labeled “EUROPE” with illuminated windows. Through one window, a figure in sleepwear is visible sitting on a sofa, directing flashlight beam onto a paper headed “ELECTRICITY BILL”. The facial expression conveys distress through furrowed brow and downturned mouth.

Darkness envelops the surrounding environment.

This composition employs architectural metonymy wherein the dwelling represents regional economic space. The window functions as a framing device establishing viewer-as-voyeur perspective. The flashlight's focused beam creates visual metonymy for constrained resources, while the electricity bill serves as document-for-system substitution representing energy infrastructure. Spatial semiotics operate through darkness/light opposition: the interior illumination signifies essential consumption, while exterior darkness embodies systemic failure. This configuration materializes the conceptual metaphor ENERGY POVERTY IS DARKNESS, with the flashlight's narrow beam representing diminished access. Cultural decoding showed minimal variance (Western 91%, Eastern 89%), suggesting pan-European recognition of energy crisis iconography.

#### 4.7. Environmental Metonymy in Waste Transfer



**Figure 7.** To developing countries.

In **Figure 7**, an obese figure lounges on a sofa surrounded by fast-food containers, soda bottles, and snack packaging. The figure extends its left arm to discard a beverage cup onto a cargo ship already overflowing with refuse. The vessel's hull bears the destination marking "To: DEVELOPING COUNTRIES". Food debris surrounds the central figure.

This imagery operates through multiple metonymic layers: the central figure embodies overconsumption through corporeal semiotics; discarded packaging represents waste generation; and the overloaded vessel signifies international waste transfer. Spatial composition creates causal relationships: the foreground consumption zone connects to background disposal mechanism through the trajectory of discarded items. The destination labeling activates place-for-process metonymy wherein "developing countries" represents waste disposal systems. Eastern viewers predominantly (87%) interpreted this scenario as representing "environmental exploitation", while Western viewers more frequently (42%)

attributed it to “consumer irresponsibility”, exemplifying Wodak’s “referential displacement” [8].

## 5. Conclusion

### 5.1. Major Findings

This cross-cultural investigation fundamentally reconfigures our understanding of multimodal metonymy through three pivotal discoveries. First, metonymic comprehension operates as a culturally-contingent negotiation rather than universal cognitive decoding, with contextual knowledge serving as the primary determinant of interpretive accuracy. Second, transcultural functionality manifests most robustly in metonymic patterns grounded in embodied experience—particularly container schemas and botanical metaphors—while culturally-anchored symbols demonstrate significant interpretive divergence. Third, ideological positioning exhibits substantial variance across cultural boundaries despite vehicle recognition accuracy, revealing a critical disjunction between referential comprehension and pragmatic alignment in global visual discourse. These findings collectively establish cultural positioning as the cardinal variable governing multimodal meaning construction.

### 5.2. Theoretical and Practical Implications

The study necessitates a paradigm shift in cognitive linguistics, challenging universalist assumptions about pictorial metonymy through its revelation of culturally-mediated semiotic access. This demands reconceptualization of visual rhetoric frameworks to account for differential cultural salience in metonymic processing. The identification of transcultural bridging mechanisms—particularly those leveraging universal bodily experiences—offers a theoretical foundation for mitigating semiotic fragmentation in global communication.

Practically, these insights generate transformative applications across three domains:

- Visual journalism requires strategic deployment of embodied metonymic schemas to enhance cross-cultural coherence;
- Media pedagogy must develop critical frameworks for navigating culturally-variable ideological positioning;
- Diplomatic communication benefits from transcultural bridging vehicles to reduce interpretive friction.

These applications collectively advance more nuanced intercultural understanding through visually-mediated discourse.

### 5.3. Limitations and Research Horizons

The study acknowledges methodological constraints in its cultural binary framework, which necessitates future investigation of intracultural variation through multi-tiered cohort analysis. The exclusive focus on static imagery further invites examination of temporal metonymic sequencing in animated political commentary.

Most significantly, the emergent paradigm of generative AI visual production demands urgent scholarly attention regarding its disruption of cultural coding systems.

Future research should pursue three critical directions: neurocognitive validation of cultural metonymy processing through brain imaging studies; longitudinal analysis of metonymic evolution in response to geopolitical realignments; and development of culturally-responsive semiotic frameworks for AI-mediated visual discourse. These pathways promise to advance our understanding of how visual rhetoric shapes—and is shaped by—the evolving landscape of global cultural exchange.

#### 5.4. Concluding Synthesis

This research establishes that the interpretation of visual metonymy constitutes an act of cultural translation rather than universal decoding. The demonstrable power of transcultural bridging mechanisms offers hope for mitigating semiotic misunderstanding in an increasingly visual global discourse. As political cartoons continue to condense complex geopolitical realities into potent visual shorthand, cultivating culturally-attuned metonymic literacy becomes not merely an academic pursuit but an essential competency for meaningful cross-cultural engagement in the 21<sup>st</sup> century.

#### Conflicts of Interest

The author declares no conflicts of interest.

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