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PERFORMATIVE IMAGE FUNCTION

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OVERVIEW

Form in language has been systematically outlined in rhetoric. The rhetorical system makes it possible to place any formal manipulations in relation to all the others that weren't employed, which offers insight into both the writer's (or speaker's) intent and the reader's response. Humans have distinct resources for processing language and image, in separate codes. Performative image function seeks to provide an image-specific system for understanding reader response in that *other* code.

Performative image function addresses the work a reader does when interpreting or "solving" an image. (*Image* is inclusive of *picture*, *photograph*, and *illustration*.) Image function in this case is not perceptual. Perception addresses the unconscious and automatic processing that allows us to resolve images: this tonal variation looks like a dog; that distortion is in perspective and suggests space. Image function, conversely, is what happens around and following perception. It resides in consciousness.

When imagery models a reader's cognitive processes it is considered *performative*: the image acts upon its reader and the reader acts upon the image, in a shared or choreographed performance. Ascribing a particular function to a particular image is inherently probabilistic and not deterministic: an image's function indicates a *likely* experience for a *reasonable* proportion of invested readers. The image function typology, the comprehensive categorization of possible functions, focuses analysis on the reader's active involvement, always. Constructivist learning theories emphasize the learner's active involvement in the generation of knowledge, in stark contrast to objectivist models that assume teachers *give* information to students. Performative image function treats the reader as a learner, in an inherently constructivist view of imagery. The interpretational

processes that image function describes occur over brief periods measured in seconds or milliseconds. It is at this scale that learning occurs.

The performative image function typology seeks to describe all imagery. Since all images do not perform cognitively, types are included to cover lack of function, performance, and cognitive engagement. Imagery that is non-functional, non-performative, and non-cognitive is designated as decorative [1]. Reiterative imagery [2] is non-performative and non-cognitive, but functional. Affective imagery [3] is performative but is by definition non-cognitive. Affect covers emotional, gut responses, while cognition is reasoning. Psychologists have described the architecture of reasoning, of cognition, as working memory. Working memory is where our distinct systems for processing language and imagery reside. Imagery that is cognitive is processed in working memory, with likely interaction between working memory and long-term memory. Given engagement with long-term memory, image function is in part dependent upon past experiences, embodied in an individual's knowledge and visual literacy. That is, part of what an image *is* happens to be defined by the reader. But images are also products of their placement. In many cases, a function is contextual: an image works in concert with other images, text, or both, within a composition.

Ultimately, the determination that a given image is *functional* is in relation to a negotiated threshold. The *nominal* qualifier [13] is used to acknowledge image structure associated with a function where it is too weak for actual performance.

Five performative image functions are considered *general*, which merely identifies them as more common than the remaining performative functions. The general image functions are: [4] exploratory, [5] constitutive, [6] narrative, [7] metaphorical, and [8] computational (see below). The special image functions

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[1] **Decorative imagery** ——————————— Non-functional type
[2] **Reiterative imagery** ——————————— Functional [2]–[12]
[3] **Affective imagery** ——————————— Performative [3]–[12]
[4] **Exploratory imagery** ——————————— Cognitive [4]–[12]
[5] **Constitutive imagery**
[6] **Narrative imagery**
[7] **Metaphorical imagery**
[8] **Computational imagery** ——————————— General functions [4]–[8]
[9] **Associative imagery** ——————————— Special functions [9]–[12]
[10] **Linguistic imagery**
[11] **Reflexive imagery**
[12] **Problematic imagery**
[13] **Nominal imagery** ——————————— Qualifier
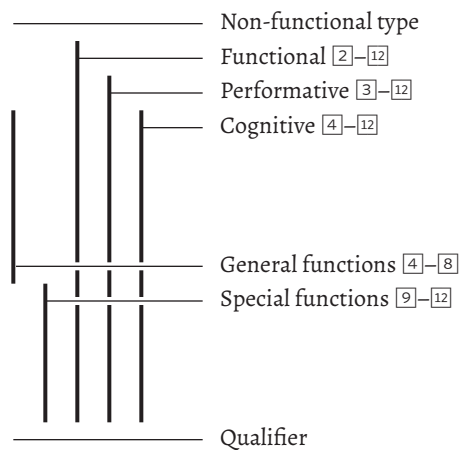
are rare. The four special image functions are: ⑨ associative, ⑩ linguistic, ⑪ reflexive, and ⑫ problematic.

Outside of decorative and reiterative imagery, image functions are not mutually exclusive. It is relatively common, for instance, for an image to function both as exploratory and constitutive. An image functioning in two or more ways does not necessarily mean it is more highly functional.

PICTURE FUNCTION LITERATURE

There is a history of work in categorizing images according to varying definitions of *function*. These typologies differ in their perspectives. Cognitive psychologist Joel Levin (1979) describes pictures largely in their relation to text. Pictures can be:

- × Decorative
- × Remunerative
- × Motivational
- × Reiterative
- × Representational
- × Organizational
- × Interpretational
- × Transformational

In Levin's typology, remunerative pictures increase textbook sales. This is not a performance-oriented function. Motivational pictures increase the reader's interest in content, which in contrast *is* a cognitively-oriented function. However, motivation is not an interpretative function—it doesn't describe performative reading activity, though it does *impact* meaning-making processes. Without motivation, readers don't engage actively in interpreting an image.

A clear distinction between Levin's picture function and performative image function is that the former in part focuses on cognitive outcomes, while the latter describes the processes that can produce a range of outcomes. Levin's transformational function is entirely mnemonic. While a performative image may itself be especially memorable or render other information more memorable, it accomplishes this through one of any number of functions. A fanciful *metaphor* may prove memorable, as might a challenging *narrative* structure or a deeply involving *exploratory* one. But metaphorical, narrative, and exploratory images operate according to functionally distinct methods, which delineates them as types. It is reader activity, which produces outcomes, that performative image function describes.

The decorative and reiterative performative image functions were taken from Levin (1979).

In later work, Joel Levin and collaborators (Levin & Mayer, 1993; Carney & Levin, 2002) describe the efficacy of illustrations in relation to text as the "seven C's" of picture facilitation. This typology relates means of efficacy, the seven C's, to corresponding functions. Some of these functions persist from Levin's (1979) earlier typology.

- × Selection: makes text more concentrated
- × Efficiency: makes text more compact and/or concise
- × Representation: makes text more concrete
- × Organization: makes text more coherent
- × Interpretation: makes text more comprehensible
- × Integration: makes text more correspondent
- × Transformation: makes text more codable

While the performative image function typology is inclusive of image-external relationships—including with text—the illustration efficacy typology's strict description of picture–text relationships restrains it. While the concern is certainly cognitive throughout, this typology is not an attempt to describe the structure of reader activity. The *correspondent* illustration efficacy is similar to metaphorical imagery in the performative image function typology, but it is more limited by describing pictures in service of text. The *concrete* and *compact/concise* illustration efficacies bear a vague resemblance to the constitutive function.

Educational psychologist Arthur Woodward (1993) extensively studied American textbooks and the relevance of visuals to content. According to his typology, all pictures in text are one of four types:

- × Non-content-related visuals
- × Tangentially content-related visuals
- × Content-supporting visuals
- × Content-extending visuals

Non-content-related and content-supporting types are equivalent to the decorative and reiterative performative types, respectively. All of the cognitive types in the performative function typology would fall under Woodward's content-extending visuals, which he found to be the most desirable.

The typologies discussed help to define the particular focus of performative image function, while also serving as the source of some performative functions. In addition to these sources, Meredith Davis suggested the computational function. Will Temple suggested the reflexive function. Both of these functions have expanded in scope since the initial suggestions. ■

METAPHORICAL FUNCTION

Visual metaphor is similar to linguistic metaphor, though it must be expressed in a code with different limitations and affordances. Metaphorical imagery helps the reader to understand one entity in terms of another. The reader maps selective characteristics of the source entity onto the target entity. This occurs through any mixture of juxtaposition, morphological similarity, and figurative gesture. (Figurative gestures here are representations that are obviously unrealistic and come across as a deliberate communication—thus *gesture*—from the designer.)

SAAB's "Born from Jets" and "Underlying Principle" ads,**A·B** and GMC's 2014 Sierra Submarine commercial**C** (a likely copy of "Born from Jets"), emphasize and suggest morphological similarity through meaningful juxtaposition. In the paired SAAB ad**A** and GMC commercial,**C** the automobile for sale appears in front of its corresponding entity (a kind of "spirit animal"), and the reader maps selective characteristics of the latter onto the former. It is a selective and reasonable mapping: there is no expectation that the 2014 Sierra pickup travels silently underwater; but it *is* meant to have some of the structural integrity necessary for a submarine to survive crushing depths.

In comparing the SAAB ads, "Born from Jets"**A** is an entirely natural scene, while "The Underlying Principle"**B** exhibits the designer's figurative gesture, an unrealistic depiction: the car's essence is that of a jet, as revealed in its reflection. (Constitutive imagery also serves to reveal the essences of entities, but does so through parts-to-whole relationships, not the kind of comparison exhibited here. Computational imagery also deals with comparisons, but in a way distinct from metaphor.)

The titan in a 1955 *Time Magazine* illustration**D** is metaphorical by virtue of figurative gesture. The context does not suggest a literal reading: this is not from a science fiction magazine, but rather a section on business and industry. In the previous examples the source and target entities were both pictured. Here only the source is seen. The target—industry—is instead implied by the illustration's context in a section of the magazine on that topic. This example is gestural in small part because the illustrator has not attempted to show the cows' reactions to the titan's emergence. It does not seem realistic. But this metaphorical image also relies on the visual literacy of the reader: he or she is presumably prepared to interpret images figuratively. The unaffected cows appear symbolic of agriculture just as the titan with his pipeline is symbolic of industry.

When multiple figures (or entities) each stand for something else in a closed system of an image, it approaches allegory. As such, metaphorical imagery can be understood on an axis with visual analogy on one end (*x*) and visual allegory on the other (*y*). The juxtaposition-dependent SAAB ad**A** operates analogically,
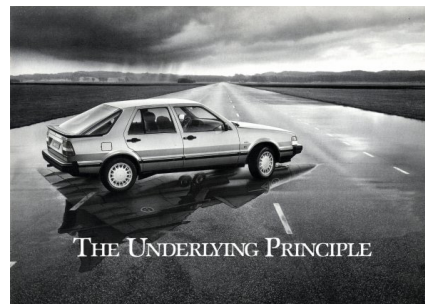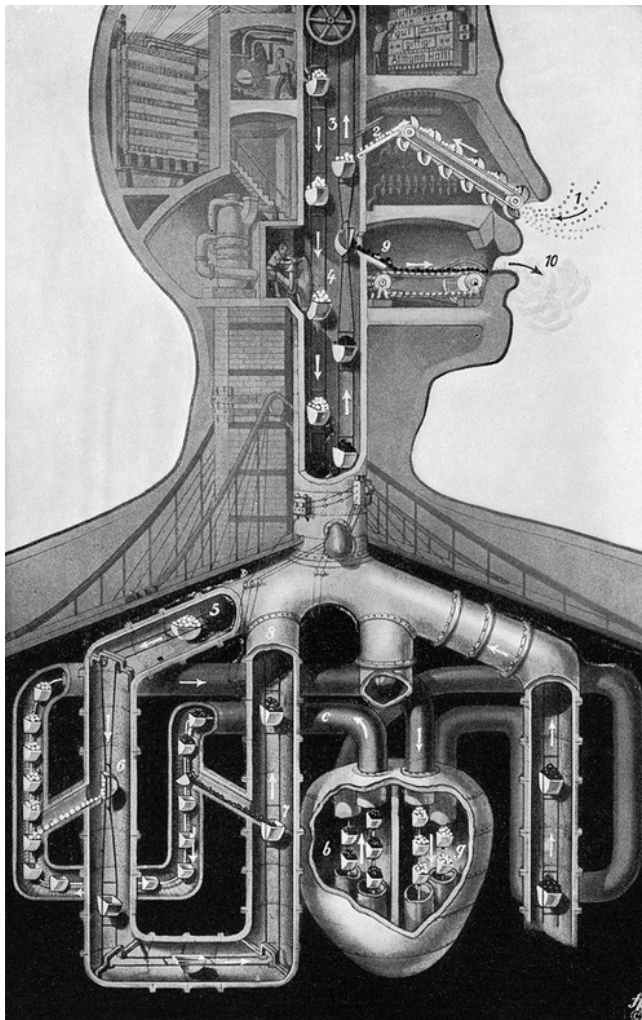

A·B ⊡ *Metaphorical*

C ⊡ *Metaphorical*

D ⊡ *Metaphorical*

while the pipe-bearing titan approaches allegory. Abraham Bloemaert's "Death and the Lovers"**E** is clearly allegorical, though it doesn't operate in the same manner as the pipe-bearing titan. "Death and the Lovers" includes some elements meant to be taken literally *in concert with* other symbolic elements. A man is literally lifting up and reaching beneath a woman's skirt (this is the target). But she does not literally have skeletal legs. Nor are the four background figures actually present. The stark arid environment itself is likewise not to be taken literally. The reader must be active in reasoning through the message of the illustration, the artist's figurative gesture, and can both imagine the natural scene (where the woman has proper legs) and its related symbology.

Fritz Kahn's industrial body diagrams**F·G** are analogical in technique, but are more immersive and more sustained than the analogical SAAB ads, placing them nearer the center of the analogy–allegory axis. In contrast, the manipulated chick-in-incubator photograph from *AARP Magazine***H** is more analogical, but is largely dependent upon the linguistic pun of "business incubator." It is, in a way, more direct than the SAAB ads. But its analogy is also more obviously packaged. It might be considered beyond (or left of) analogy (at *w*), as "mere" simile in service to text. The chick is cute, and its business attire is fanciful. This is metaphorical imagery meant to provide motivation for the article. (This is also an example of problematic imagery, in the sense that the reader must "solve" the metaphor. Its interpretational dependence on the phrase "business incubator" also makes it at least nominally linguistic. So though its metaphorical function might be simpler, overall the image does plenty.) ■

F　⬚ *Metaphorical*　⬚⬚ *Nominally Narrative*　⬚ *Exploratory*　⬚ *Constitutive*

E　⬚ *Metaphorical*

SYSTEMATIC SYMBOLISM

Simile   **Analogy**   **Allegory**

w ┣╌╌╌╌╌╌╌ x ┣╌╌╌╌╌╌╌╌╌╌╌╌╌╌╌╌╌╌╌╌╌╌╌╌╌╌╌╌╌╌╌╌ y

H

A

F

D

E

G   ⊡ *Metaphorical* ⊡⊡ *Nominally Narrative*
⊡ *Exploratory* ⊡ *Constitutive*

H   ⊡ *Metaphorical* ⊡⊡ *Nominally Linguistic*
⊡⊡ *Nominally Problematic*

APPENDICES

Ⓐ LEVIN'S PICTURE FUNCTIONS

Decorative: Pictures increase a text's attractiveness.
Remunerative: Pictures increase publisher's sales.
Motivational: Pictures increase children's interest in the text.
Reiterative: Pictures provide additional exposures of the text.
Representational: Pictures make the text information more concrete.
Organizational: Pictures make the text information more integrated.
Interpretational: Pictures make the text information more comprehensible.
Transformational: Pictures make the text information more memorable.

Levin, 1979

Ⓑ LEVIN ET AL.'S ILLUSTRATION EFFICACY

The Seven C's of Picture Facilitation

Pictures can make text more concentrated. A selective reader is able to discriminate between critical and non-critical textual information. Illustrations can facilitate this proficiency when somehow foregrounding the "essence" of a passage for purposes of recall and comprehension.
Associated with **selection** *function.*

Pictures can make text more compact/concise. In many cases, information is inherently spatial and a text-based explanation is necessarily ponderous.
Associated with **efficiency** *function.*

Pictures can make text more concrete. "Concrete" refers to a representation (image) being more completely similar to the thing it represents. In certain cases pictures leave a "memory trace" superior to verbal representation alone. Narratives accompanied by representational pictures promote detail recall better than those without.
Associated with **representation** *function.*

Pictures can make text more coherent. Illustrations can provide a space to connect varied information found in a text. Low-ability students are particularly aided by this because otherwise they are likely to encode information in fragmentary bits and pieces.
Associated with **organization** *function.*

Pictures can make text more comprehensible. Some texts, particularly science texts, can be unintelligible without a great deal of expertise in a particular area. When a reader does not possess the necessary knowledge for productive interpretation, complexity can be managed and clarity enhanced by accompanying illustrations.
Associated with **interpretation** *function.*

Pictures can make text more correspondent. Unfamiliar concepts can sometimes be understood through more familiar but similar concepts. Correspondence is effectively metaphor application: the "structure" of the familiar (the eye, for example) is "mapped" onto the unfamiliar (the aperture of a camera) in order to explain the unfamiliar.
Associated with **integration** *function.*

Pictures can make text more codable. Codability here refers to representational codes and the transformation of one into the other (text into image or image into text). This type is not necessarily associated with difficult-to-comprehend material, but rather difficult-to-memorize material, such as historical passages (which often come down to a parade of names, dates, etc.) and medical texts (replete with specialized terminology).
Associated with **transformation** *function.*

Levin, 1979; Levin & Mayer, 1993; Carney & Levin, 2002

Ⓒ WOODWARD'S ILLUSTRATION CONTENT RELEVANCE

Non-content-related visuals: irrelevant or decorative.
Tangentially content-related visuals: connected to broad subject matter only.
Content-supporting visuals: repetitive or reiterative.
Content-extending visuals: additional information that enhances and extends. (Most desirable.)

Most textbook visuals are *content supporting*, with almost no examples of *content extending.* In order to support or extend content, captions must be studied along with illustrations, as text can increase specificity of message.

There are five possibilities for picture captions:
No caption whatsoever.
Title and name only.
Repetition of main text.
Extension of main text (providing new information).
Question to the reader.

Woodward, 1993

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