

How Imagery Models Interpretation: The Classification of Image Function

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Abstract

Much imagery is merely decorative or intended to be relevant and appropriate. But some imagery, on its own or situated within a meaningful layout, involves its reader more deeply, performing upon or with her. The image can model reader interpretational processes in the sense that the reader's creative construction of knowledge is guided by its structures. Otherwise inert imagery, when activated by a reader, can become metaphorical, exploratory, constitutive, narrative, comparative and computational, among other functions. These classifications of performative image function represent a range of possibilities for the designer, advertiser and visual artist. Performative image function is a means to look at visual representations anew, by focusing on the seconds and milliseconds of the image's effective "life." The typology builds upon the work of cognitive psychologists, such as Joel Levin, who sought an honest assessment of the efficacy of textbook illustration for learning. Performative image function conceptualizes all imagery as designed for learning, as the reader seeks to make sense of the representations she encounters.

How Imagery Models Interpretation: The Classification of Image Function

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INTRODUCTION

This paper is comprised of two distinct sections. The first section makes an argument for viewing illustrated media in performative terms, according to a constructivist epistemology. This leads to a focus on imagery and the reader's construction of knowledge with its information. The second section presents 13 isolated performative image functions in brief. It is beyond the scope of this paper to describe them in more detail or to illustrate them with exemplars.

Throughout this paper, the term *reader* will be used in lieu of *user*, *viewer*, *consumer*, or *audience*. Avoiding the term *user* is not to understate how people interact with media rather than simply receive it. Indeed, reading is here considered to be entirely and persistently interactive.

The term *media* will here refer to apparently static media (e.g. an illustrated book), surfaces on which information is presented in text and image formats. Explicitly interactive media (e.g. a website) raise some issues not addressed in the performative image function typology, though all functions remain applicable to them.

THE PERFORMATIVE NATURE OF MEDIA

The Philosophical Underpinnings of Image Function

What does a reader do with imagery? And what does imagery do with a reader? This is but one question. It marks the territory of inquiry as one of process, an experience between reader and image with a beginning and an end.

Such a conceptualization, which emphasizes imagery's performative capacity, is complementary with literary theorist Louise Rosenblatt's transactional theory of reading (1978). Rosenblatt identifies *the text* and *the poem*, specialized terms that differ from the usual meaning. The text, which appears in spirit to be inclusive of imagery, activates elements already in the reader's memory, and regulates what the reader focuses on. The poem is a distinction for when the text becomes a literary artwork. It is considered as *an event in time*, not an inert object. The text guides reader experience, producing the poem. Because of the necessarily mannered nature of imagery, all images are here considered to qualify as examples of Rosenblatt's "poem."

Contrast such a transactional view of reading with a basic communication model. Mathematicians Claude Shannon and Warren Weaver established sender, channel, and receiver as the components of transmitting a signal. The flow runs from sender to receiver, through a channel (Figure 1). Though the Shannon/Weaver transmission model originally described machine-to-machine communication, it became a model for human-to-human communication with media (Davis, 2012). In that capacity the model is naïve. An updated model by communication researchers Philip Emmert and William Donaghy (1981) addressed weaknesses in the simpler Shannon/Weaver model, introducing feedback and identifying two communicators. Feedback in the Emmert/Donaghy model notably equates with dual directions of communication, where the Shannon/Weaver model was unidirectional in the message's path from sender to receiver. Persisting in the Emmert/Donaghy model, however, is the specter of the *message*, something that precedes its own ultimate form and travels from one independent communicator to another. But imagery is so mannered, so formal, that in most authentic cases it is difficult to argue for it as a conveyer of an underlying message. The image, in a sense, is its own entity.

Figure 2 presents a much more basic model where sender becomes designer, channel becomes media, and receiver becomes reader. But in terms of an acknowledgement of



Figure 1. Shannon/Weaver transmission model of communication.

performance between media and reader, as well as a suspicion of a reified “message” in imagery, there is no flow illustrated, no arrows to be found. The Shannon/Weaver model flows in one direction, while the Emmert/Donaghy model flows in both. Here there is simply a connection between media and reader, which becomes a territory in which knowledge is constructed, through the act of interpretation, where both media and reader perform. The reader’s engagement, measured in seconds and even milliseconds, is the effective “life” of the image. Note that while there is a corresponding relationship between designer and media, the exclusion of any flow means that there is no designer/reader connection, not even through media. Philosophically the designer (or author) is irrelevant in most cases of reading.

Text and image are both formats for information. Human cognitive architecture treats them as fundamentally separate codes, each with its own characteristics, limitations, and affordances (Baddeley, 1998; Sadoski & Paivio, 2001). One rather straightforward implication of this is that linguistic and pictorial information, being distinct, beg separate methods for analysis. Rhetoric, a classification system for form in language, has been developed over centuries. Given such a resource for understanding text, it is not surprising that systematic attempts are being made to develop a visual rhetoric, an application of rhetoric to imagery (Scott, 1994; McQuarrie & Mick, 1996). But such efforts must adapt a system devised for one code for use in another. An alternative to retrofitting rhetoric for imagery is to address imagery on its own terms.

Enter Image Function

Cognitive psychologist Joel Levin, when addressing the effectiveness of images in textbooks in the '70s, inaugurated a body of literature on image function (actually *picture function*) (Levin, 1979; Levin & Mayer, 1993; Carney & Levin, 2002). Image function in the literature extends beyond the “life of the image,” or performative concerns. For instance, Levin’s (1979) original typology includes a remunerative function, acknowledging that textbook publishers utilize images to increase textbook sales. This function addresses outcome, not interpretation.

The author has developed a typology of performative image function, which exclusively addresses interpretational processes. In particular, performative image function concerns how imagery involves readers in the construction of knowledge in reasonably predictable

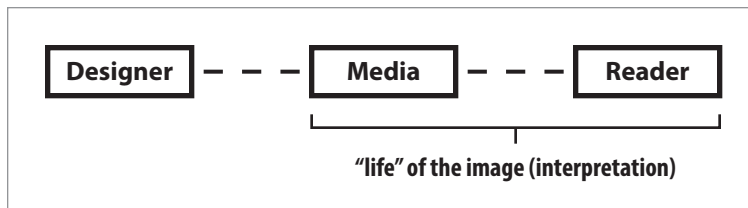


Figure 2. Designer/media/reader relationship, absent the flow of a message through the system.

ways. Imagery is seen as modeling, or structuring, interpretation. Image functions were determined from a continuing search through illustrated books (which included artwork) and advertising. These 13 distinct functions are briefly outlined in the following section.

Performative image function provides a way to look at images anew that is inherently reader- or user-centered. Because it accounts for imagery's place within compositions, including other imagery and text, it addresses the common reader's common experience of the image.

IMAGE FUNCTION OVERVIEW

A Note on Non-Cognitive Functions

In an attempt to develop a system for classifying all images used in the context of compositions (in illustrated books, etc.), non-functioning types are included. Decorative imagery (Levin, 1979) is irrelevant to its context and thus instigates no significant interpretational activity. Reiterative imagery (*ibid.*) is relevant to its context but adds nothing, likewise failing to model any significant interpretational processes.

Affective imagery, that which elicits an emotional gut reaction, is by definition not cognitive. While it does not model interpretation, it does produce a probabilistic response, making it performative.

General Cognitive Functions

There are 6 identified general cognitive image functions:

- ▶ Exploratory
- ▶ Constitutive
- ▶ Narrative
- ▶ Metaphorical
- ▶ Comparative
- ▶ Computational

In each case, an image thus classified is likely to deeply involve the reader in what is essentially a learning process.

Exploratory Imagery

Most images require significant eye movements for processing and even basic perception. Readers are not often cognizant of their eye movements. Exploratory imagery is complex enough, and occurs over enough space, that the reader must make more conscious determinations of how to navigate its totality. The designation of an image as exploratory is

thus largely a factor of *meaningful* complexity. Exploratory imagery is deeply involving. Exploratory images are often dual-functional, most frequently doubling as either constitutive or narrative.

Exploratory imagery is always a parallel system, meaning that there are numerous entry points and no one “correct” order to addressing the details. Exploratory imagery is thus particularly interactive.

Constitutive Imagery

There is a great specificity to human language, an efficiency to propositional communication, which images cannot duplicate. But imagery has its own efficiencies. Constitutive imagery describes something in great detail, in a manner that cannot be matched linguistically. It presents parts-to-whole relationships in concrete fashion, leaving it up to the reader to constitute a whole from presented interrelated parts. Much constitutive imagery is also exploratory by virtue of its complexity.

Constitutive imagery is often predicated on multiple views resolving into one conceptualization or entity as held by the reader. The reader provides the resolution by constructing mental imagery with the raw resources of the constitutive image. The reader’s mental imagery is *similar* to pictures, but it is not subject to the same Cartesian rules, and it is embedded within a network of information: the reader’s individualized knowledge.

Narrative Imagery

Narrative imagery suggests the passage of time. With narrative imagery it is the reader who constructs the episode from what is otherwise an inert surface. While actual video is certainly temporal, it rarely qualifies as narrative imagery. This is because video is an exceptionally passive medium from the reader’s point of view. Events unfold in a coordinated signature that is out of viewing control. Attentional processes, expressed in eye movements, are made in a predictable fashion according to the images flashing through the video at pace. Performative image function is contingent upon interactivity. It is more involving for a reader to create video than to receive it.

Narrative imagery is inherently serial: there is a proper reading order for the resultant narrative to make sense. This does not mean that the arrangement of stages needs to occur in a single line, though this is most common.

Comics artist Scott McCloud (1994) emphasizes the performative crux of comics as the conceptual space between frames (the *gutters*). The real activity of comics occurs there, through closure, where the reader constructs continuity, filling in details that are often purposely left out by artists. Closure is at play in all forms of narrative imagery.

Frame-based narrative sequences almost invariably include the repetition of figures (usually characters) as they change over time. This can occur without frames as well. Narra-

tive can also be suggested without any repetition whatsoever. There are five basic strategies for constructing narrative imagery:

- ▶ Framed sequential, where figures and environments are repeated in individual cells (e.g. a comic strip).
- ▶ Graphic repetition, where silhouetted figures are repeated, exhibiting changes, in a decontextualized graphic space.
- ▶ Natural repetition, where figures are repeated in a natural space, or environment. Here the environment appears to suggest regular rules of Cartesian space. The reader must recognize that multiple figures represent one changing over time, in a visualization that breaks those rules.
- ▶ Intra-figural, where changes over time are represented within a single unrepeated figure. (This is an exceedingly rare strategy, examples of which can be found in medieval manuscripts.)
- ▶ Evidentiary, where a natural moment in time is depicted, but which includes “evidence” of past events. The reader performs as a detective in a crime scene, inferring past events from a present state.

Metaphorical Imagery

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. The mapping occurs through any mixture of juxtaposition, morphological similarity, replacement of one with the other, or figurative gesture. (Figurative gestures here are representations that are obviously unrealistic and come across as a deliberate communication—thus *gesture*—from the designer.) For instance, a car for sale can appear to be more like a jet if the former is positioned in front of the latter, with a message stating that they are both made by the same manufacturer.

Comparative Imagery

Comparative imagery presents two or more entities to the reader, who then becomes involved in assessing their similarities and differences.

Computational Imagery

Computational imagery involves the reader in assessing differences in quantity and scale. Images provide the raw material, but the reader must calculate significance. Computational imagery can be used for rhetorical effect in addition to its more common applications in information design.

A Note on Special Cognitive Functions

The special cognitive functions are less common than the general functions, though they are certainly no less performative. The currently identified special functions are:

- ▶ Associative, incomplete until fulfilled by the reader's creation of mental imagery.
- ▶ Linguistic, engaging the reader in an exercise of translation from picture to language (e.g. as a rebus).
- ▶ Reflexive, making the reader aware of its material means of existence, where the typical reader usually takes an image's creation or form for granted.
- ▶ Problematic, engaging the reader in a conundrum to which regular rules of interpretation are at least temporarily insufficient.

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