

Iconicity in the Visual Lexicons of Comics

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Abstract: Pictures are stereotypically associated with iconicity—they often resemble what they mean. However, this iconicity may make pictures appear as if they are structurally simple and easy to understand, while confusion about the orthogonal nature of signification and conventionality has led to misperceptions about the structural properties of pictures. This chapter argues that the iconicity of graphics holds greater complexity than most believe by focusing on the visual lexicons used in comics. Even the most stereotypical iconicity of pictures involves conventional forms that interact to construct meaningful representations, and visual lexicons involve structural properties akin to lexicons of other modalities. Altogether, this work reinforces the complexity of the graphic modality and of iconicity itself.

Keywords: iconicity, visual language, comics, visual lexicon, pictures, semiotics, Peirce

X.1 Introduction

Of all the modalities of human expression, graphic representations may be the most stereotyped to be associated with iconicity. Drawings often resemble what they mean, and thus exemplify the signification of iconicity. However, this straightforward iconicity may betray a complexity of iconicity that pervades graphic representations, and we here aim to elaborate on these issues. In line with Visual Language Theory (Cohn 2013), we argue that graphic representations involve linguistic structures whereby a modality (here, graphics) corresponds to a meaning in systematic ways that can be entrenched in a lexicon, just like in any other language. Our primary focus here will be on characteristics of the lexicons of visual languages used in comics, as they use both a rich and codified visual lexicon combined with creative and productive expressions. However, such patterns also appear prevalently in emoji, instruction manuals, and many other graphic representations, and our broader argumentation would extend to such other pictorial forms.

X.2 Semiotic foundations

Consider first the two characters in Figure X.1. Because these representations both look like what they represent—i.e., walking male humans—they can be said to be iconic. However, many authors have noted that Figure X.1b is more conventionalized than Figure X.1a (e.g., Greenberg 2021; Saraceni 2003), and indeed many of the visual representations pervading the lexicon of comics display such conventionalization. As conventionalization is typically thought of as a trait of symbolic representation, this observation gives rise to ideas about iconicity and symbolicity being on a spectrum (e.g., Greenberg 2021; Saraceni 2003). This gradient view persists because iconicity and symbolicity here are viewed as properties of the graphic signal itself. Thus, Figure X.1a wrestles with having these multiple attributes.

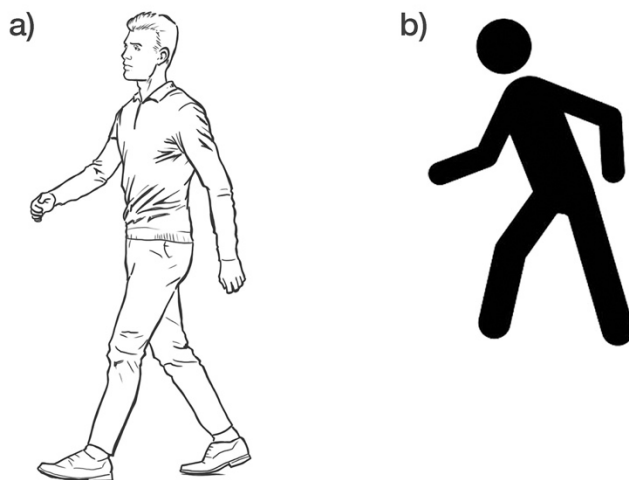


Fig. X.1 a) An idiosyncratic depiction of a walking man, and b) a conventionalized walking man typical of a street sign from the United States.

Yet, resemblance and conventionality are not actually at odds with each other in a more thorough understanding of how signification operates, as proposed by the philosopher Charles Sanders Peirce in his theory of semiotics (Peirce 1931, 1940). As represented in Figure X.2, Peirce proposed a triadic system, which we adapt here to a more contemporary view from linguistics and psychology. A sensory signal (Peirce: a ‘sign vehicle’ or ‘representamen’) corresponds to a referent (‘object’) which is a conceptual structure stored in long-term memory, which in turn contributes to a unique and temporary packet of conceptual structure created on-line for purposes specific to ongoing communication (‘interpretant’). In this relationship, the creation of meaning is thus a mental activity arising from the mental connection of a sensory signal to a conceptual representation to create a transitory compositional conceptual representation relevant to a particular context. This view is consistent with contemporary theories of meaning as a cyclic process occurring between stored representations and their compositionality (Baggio 2018).

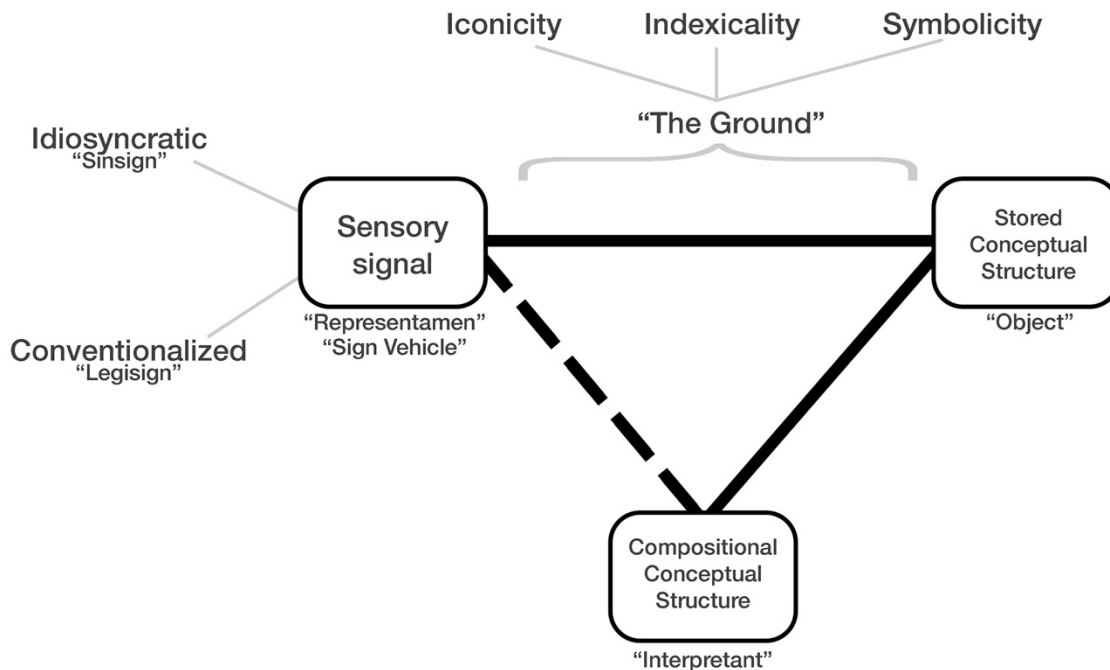


Fig. X.2 A simplified Peircean ‘triangle’ adapted with contemporary terminology.

It is noteworthy that this signal and its referent here are not inherently coupled (as would be the case in a Saussurean sign), but rather they maintain a characterizable interface. While Peirce offered complex dissections of each of these three components, we here focus on aspects of the sensory signal and the correspondence between the sensory signal and its object.

First, a sensory signal can take various forms.¹ It can manifest as an idiosyncratic signal (Peirce: ‘sinsign’) whereby each instance is a unique and different token. These perceptible signals are thus unsystematic and varied. For example, footprints in the sand resemble a foot, but

¹ We will not focus on it in our later analysis, but Peirce would identify a third type of representamen as a ‘qualisign’, which is potentiality of a sign that has yet to fully manifest. It is thus the disembodied quality of a sign, without yet arising in sensory experience.

each imprint a foot makes is a unique and varied signal in contrast to the others. Other signals might be systematic, regularized, or patterned ('legisigns') and thus could be described as conventionalized. Because of this conventionalization, the signal would become a type, which could then manifest as idiosyncratic tokens each time it is produced (a 'replica'). For example, in contrast to footprints in sand, a drawing of a foot in dance notation is conventionalized, despite the idiosyncratic ways that they appear in each instance.

This difference between types of sensory signals manifests between Figure X.1a and X.1b. Figure X.1a is a unique, idiosyncratic representation, while Figure X.1b uses a conventionalized pattern. It is worth emphasizing that this contrast is solely reflected in the sensory signal itself, which, for Figure X.1 means the regularization of the arrangements of graphic lines and shapes. For speech, this would apply to the regularization of the phonemes and speech sounds. Indeed, such differences in the regularity of the modality could also be applied to non-meaningful signals. For example, patterned speech signals arise in meaningless syllables people use when singing (*shala-la-la-la*) or the asemantic visual patterns created by geometric shapes.

That is, conventionality (or the lack thereof) is a feature of the sensory signal, but only in some cases does that conventionality enter into meaning-making. This creation of meaning or 'signification' is reflected in how a sensory signal corresponds to its referent (Peirce's 'object'). Peirce calls this interface the 'ground', and it manifests in his most well known trichotomy. First, 'iconicity' arises when the sensory signal resembles or reflects the qualities of its referent. Again, the representations in Figure X.1 are iconic because the arrangements of lines resemble the conceptual knowledge of what human males look like. Second, 'indexicality' occurs when the sensory signal indicates or points to its referent as in a graphic arrow or deictic gesture which point to whatever they indicate. Third, 'symbolicity' arises when a sensory signal has an arbitrary relationship to its referent, and because this arbitrary association must be agreed upon, symbols are invariably conventional.

Thus, though indexicality and iconicity can use both idiosyncratic and conventionalized signals, symbolicity derives its signification through the conventionality alone. The result is that conventionality and signification are orthogonal to each other, and while all symbols are conventional, not all conventional signals are symbolic. Iconicity and symbolicity are not mutually exclusive modes of signification nor do they lie on a gradient spectrum. Thus, both the pictures in Figure X.1 are iconic, though X.1a is idiosyncratic and X.1b is conventionalized. Again, signification (iconicity, indexicality, symbolicity) are characteristics of the 'mapping' of a signal to its referent, while conventionality (or lack thereof) is a feature of the signal itself.

Finally, as this paper explores iconicity as a primary topic, it is worth also highlighting the ways that Peirce breaks down this notion. First, similarity or resemblance is fairly broad, and includes "abstract relations or structural homologies" (Nöth 1995: 123). Such iconicity can also be established pragmatically and can arise out of the relation between the signal and referent, rather than solely as an intrinsic logical feature of the signal. Similarity is also not restricted in its referentiality, and resemblance can be made to abstract or fictitious objects (Nöth 1995), underscoring that referents (Peircean objects) are conceptual.

In addition, Peirce identifies several variants of how iconicity manifests (there are also variants of other types of reference, but we emphasize only those related to iconicity because of the topic of this chapter). The basic iconicity that arises through similarity between a signal's qualities (shape, color, texture, pitch, timbre, duration, etc.) and its referent is called 'imagetic iconicity' (sometimes also called 'imagic iconicity'). Such iconicity appears visually in

photographs, drawings, paintings, and sculptures, and is also exemplified by ideophones or onomatopoeic words in speech (Dingemanse et al. 2015).

Another kind of resemblance can arise through the arrangements of elements in a signal, ‘diagrammatic iconicity’. For example, a circle barely resembles a head, while lines do not resemble a torso or limbs. Yet, these elements combined in a stereotypical stick figure creates an arrangement relative to each other that does resemble a human figure. More complex examples of diagrammatic iconicity arise in the various types of graphs or diagrams that depict conceptual distinctions (bar graphs, scatterplots, tree diagrams, etc.). In speech, diagrammatic iconicity appears when the sequence of words reproduces a sequence of events, as in *Veni, vidi, vici* (Nöth 1995: 123), an ordering that is thought to be a default assumption for the comprehension of discourse (Zwaan and Radvansky 1998).

Finally, ‘metaphoric iconicity’ reflects similarity in terms of the resemblance between representations. In speech, researchers have convincingly argued for lexical clusters supporting analogic associations between domains (e.g., Lakoff and Johnson 1980), such as verticality being associated with emotions (HAPPY IS UP, SAD IS DOWN) or vision being associated with knowledge (‘I see what you mean’). Such associations have also been well established in the visual-graphic modality, whether they are established conventions (Forceville 2005, 2016; Szawerna 2017) or novel combinations (Arts and Schilperoord 2016).

It is again worth reiterating that these traits of signification are *not* a feature of the signal itself, but rather they reflect the nature of the correspondence between a signal and its referent. As such, a signal might use multiple types of signification at once. In addition, the signification itself might involve multiple ‘cycles’ of signification. We will address more specific examples of this below. All of this is to emphasize that signification is about the interface between form and referent, and such interfaces may both be cognitively encoded for a given representation and/or pragmatically determined in context. With these basic semiotic constructs in place, we can now turn to describing how iconicity manifests in visual representations specifically.

X.3 (Not-so-)simple iconicity

In our discussion of the iconicity of the lexicon of visual languages used in comics, we can begin with the most straightforward examples. As described above, pictures that use imagetic or diagrammatic iconicity resemble their referents. Within the visual languages of comics, these are the basic mimetic aspects of pictures that look like what they represent: people, objects, locations, etc. Since pictures in comics or other contexts typically do not represent people or objects in isolation, the context of each item’s iconicity is reinforced by their aggregate context within a larger scene. For example, Figure X.3a depicts an element in isolation that may or may not be easy to identify on its own. However, Figure X.3b places that element into context, where it can be recognized as an ear. The arrangement of lines has not changed, nor has its iconic mapping to meaning in terms of resemblance, but the context of those lines in a scene helps strengthen its recognition. This reinforces that iconicity is not simply a property of the visual sensory signal but arises out of the correspondence of that signal to meaning, embedded within a context. As a result, iconicity is not a static state, but occurs through dynamic process.

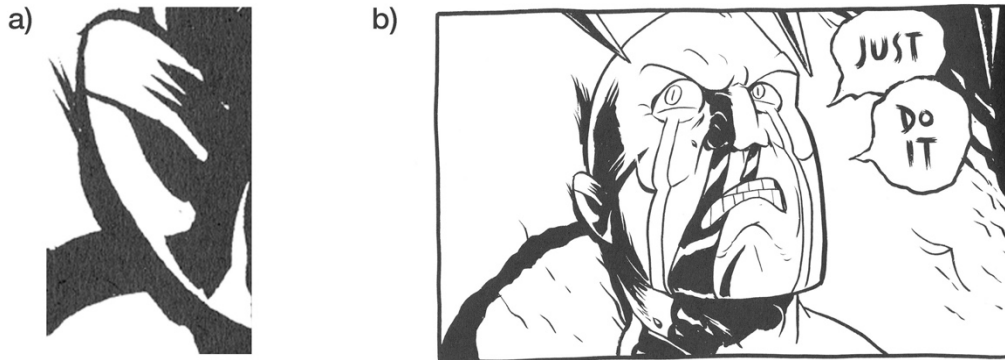


Fig. X.3 a) A graphic representation which might be hard to recognize outside of b) its context within a representation. *Heck* © Zander Cannon.

X.3.1 Conventionality of basic iconicity

Drawers of pictures can also encode these iconic correspondences in conventional ways. Like in other languages, the lexicon of visual languages is comprised of stored mappings between form (here graphics) and a conceptual structure (Jackendoff and Audring 2020), and these lexical items can either stand alone or comprise the building blocks for novel forms or other stored items. In visual languages, lexicons also vary in the size of their lexical items. Following theories of morphology, the most basic lexical items would be ‘analytic’, and able to stand alone as units. For example, a stick figure can exist as a whole representation that is not decomposable into coherent subparts (only a circle and lines).

In contrast, ‘synthetic’ lexical items would be small, conventionalized elements that could combine to create novel or conventionalized wholes. For example, Figure X.4a shows open hands and closed fists by three American comic artists who all share a conventionalized schematic pattern. These hands and fists are all iconic because they resemble actual hands but retain their conventionality. These componential patterned forms, what we call ‘micromorphs’, do not stand alone but can combine to build larger representations which may or may not also be conventional (Cohn 2013, 2018). For example, in Figure X.4b there are comic covers which feature both the open hand and fist schemas shown in Figure X.4a. In characters being punched, these hands appear embedded in idiosyncratic poses. However, the central punching figures also share a larger schematic form (right hand extended, left arm back, left leg bent in front, etc.), within which these micromorphs appear.

a) Jack Kirby



Jim Lee



Erik Larsen



b)



Figure X.4 a) Drawings of open hands and fists by various comic artists, b) Comic covers from *Savage Dragon* by Erik Larsen with consistent punching figures. Outline added for further emphasis. *Savage Dragon* © Erik Larsen.

Thus, iconicity can appear in pictures with a range of conventionalization at different sizes. Iconicity can manifest as fully idiosyncratic pictorial representations (such as life drawing) or as holistic conventional forms (such as stick figures). Iconicity can also appear in the micromorphs that then combine to form either novel idiosyncratic images (the characters being punched in Figure X.4b) or to form the building blocks of larger schematic forms that are also conventionalized (the punchers in Figure X.4b).

It is worth noting that within Visual Language Theory, this encoded conventionality of graphic schemas comprises an artist's 'style'. Learning to draw is thus a process of acquiring and proficiently using these schematic forms (Cohn 2012). A person's idiolect of a visual lexicon comprised of these patterned schemas constitutes the way that they draw, and to the degree that similar schemas are shared with other people, we can say that they share a common lexicon of

visual languages. At a broader level, these differences can distinguish the vocabularies of cultural systems, such as the style characterized by the ‘Kirbyan American Visual Language’ stereotypical of superhero comics from the United States (as in Figure X.4), in contrast with the stereotypical visual lexicon of the figures in the Japanese Visual Language from manga. Thus, the regularized properties of visual lexicons constitute the ‘style’ of drawings, which becomes indexical of particular cultures, traditions, genres, and/or individual artists.

In turn, comprehenders may come to habituate to certain lexicons, be it of whole visual languages or individual drawers. For example, despite the intended iconicity of drawings, cross-cultural research has found various examples where naïve comprehenders were not able to construe the expected interpretations of pictures (Goldsmith 1984; Wilkins 2016), and studies have found that children progress in their development in recognizing drawings of objects (Ganea et al. 2008). Though a particular drawer might have a fairly unique way of rendering a particular object, comprehenders familiar with those representations may thus expect such variance and thereby facilitate recognizing their iconicity in ways that may be less forthcoming to comprehenders without such familiarity with that particular graphic system. In this way, iconicity may mask the proficiency necessary to comprehend pictures, making them appear more universal than they may be.

X.3.2 Conceptual correspondences of basic iconicity

Depending on the nature of those conventionalized forms, iconicity may also correspond to different aspects of conceptual structure. For example, drawings of easily recognizable generic objects (chairs, cars, humans, dogs, laptops, etc.) are interpreted visually with relation to corresponding basic-level concepts, which are said to be visually idealized (neither too schematic, nor too specific). To the extent that such drawings visually resemble the basic visual properties (e.g., shape, color, texture, and pattern), they use imagetic iconicity, and to the extent that their structural relations reproduce basic-level concepts, they also use diagrammatic iconicity (Farias and Queiroz 2006).

As pictorial styles become more schematic, such as in cartoony images, they correspond to more generalizable forms of concepts (McCloud 1993). The result is that highly schematic or cartoony images may correspond to conceptual prototypes (Rosch 1975) rather than specific instances or subordinate level concepts (Medley 2019). Such idealized mental representations are conceptually prominent because they arguably strike an optimal balance between specificity and schematicity (Bauer and Just 2017; Ungerer and Schmid 2013). Indeed, studies of neurocognition show that cartoony images are processed faster and more easily by the brain than photorealistic faces (Kendall et al. 2016).

The stylistic cline between schematic or cartoony versus detailed and photorealistic may correlate with their degree of imagetic versus diagrammatic iconicity. Since imagetic iconicity is based on perceptual properties within the graphics (shape, color, texture, and pattern), more of such characteristics will lead to a greater likelihood of such iconicity. These traits naturally correspond to more complex and detailed graphic representations, which in turn depict more specific concepts. In contrast, schematic or cartoony representations maintain fewer correspondences to perceptual properties, and their schematicity instead motivates further diagrammatic iconicity. This in turn relates to more basic-level conceptual types, rather than the specificity of conceptual tokens. In other words, detailed realistic drawings lean towards using

imagetic iconicity to depict resemblance of a *particular* object, while schematic or cartoony drawings lean towards using diagrammatic iconicity to depict resemblance of a generalized, prototypical object.

With greater specificity, iconic drawings of easily recognizable unique objects (Michelangelo's 'David', the Eiffel Tower, Albert Einstein, etc.) are interpreted visually with relation to corresponding subordinate-level concepts, which are visually specific. Such resemblance is no longer a correspondence between graphics and a conceptual prototype but to specific conceptual representations. This persists no matter the stylistic variation of the graphics: a realistic rendering of Einstein and a cartoony rendering of Einstein both correspond to the same conceptual representation of the actual person.

Finally, iconic drawings of things that are not easily recognizable may be interpreted visually with relation to more than one basic-level concept. For example, a drawing of an anthropomorphic animal like Donald Duck would be a visual blend that evokes both the basic-level duck and the basic-level human (Fauconnier and Turner 2002). Note that these concepts do not require actual existing objects in the world. A drawing of a dragon or other imaginary or mythological creatures can maintain an iconic resemblance to basic-level concepts of those objects, based on the exposure to other representations of those creatures (which themselves may comprise visual blends, such as a dragon combining basic-level concepts of a lizard and bat wings). Drawings of fully novel imaginary creatures would evoke iconicity to further combinations of basic conceptual features (such as knowledge of body parts generally and/or specific body parts from various creatures).

Once any of these visual representations is established as iconic to its conceptual basis, it can be encoded within memory to form the basis of a representation that can serve as the Peircean object of resemblance for other graphics. For example, the first time a person might read a Donald Duck comic, they will have to link Donald Duck's representation to conceptual knowledge of both ducks and humans. However, once this form-meaning pair is established, it can serve as the basis for subsequent encounters with representations of Donald Duck, whether other drawings within the same comic, in other comics or media, or other artists with stylistic variation for how Donald Duck is represented. Such iconicity would also be the basis for establishing 'coreference' between instances of a character across a pictorial sequence, an ability which requires exposure and practice with visual narratives (Cohn 2020). In linguistic terms, the sum total of these encounters would establish an abstract, prototypical Donald Duck lexical item with iconicity across the allographic variation across tokens.

This abstraction for Donald can also inform the recognition of other duck-human blends (Uncle Scrooge, Huey, Dewey, Louie) and can contribute to (or benefit from) the formation of a superordinate schema for animal-human blends more broadly, which in turn facilitates other subordinate graphic blends (mouse-human, dog-human, etc.). In other words, it would yield an 'inheritance hierarchy' (Murphy 2002), where the abstracted superordinate animal-human schema is at the top, then with a level with specific animal blends (duck-human, mouse-human), then a subordinate level with specific characters. That is, beneath the abstracted level of duck-humans we would find Donald Duck and Uncle Scrooge, and beneath the abstracted mouse-human level we would find Mickey and Minnie Mouse, etc. The similarities across these laterally encoded representations (i.e., their diagrammatic iconicity) would reflect that these lexical items are 'sister schemas' (Jackendoff and Audring 2020).

To the extent that such representations resemble their meaning in terms of their visually perceptible features (shape, color, texture, etc.), they would involve Peircean imagetic iconicity.

However, they would also function with diagrammatic iconicity if their structural relations reproduce the structural relations of their meaning. Importantly, in visually mimetic drawings, diagrammatic iconicity is always subordinated to imagetic iconicity in that drawings of characters, objects, and locations are never diagrammatic without also being imagetic, or else they would cease to be visually similar.

X.4 Iconicity in form to inherit meaning

Another type of iconicity is established when graphics use iconicity in reference to a pre-existing graphic representation. In homages or parodies, the graphic form of a representation is made to look like another well established depiction, such as a famous painting, photograph, album cover, movie poster, etc. Consider, for example, the numerous parodies of paintings like the ‘Mona Lisa’ or the ‘Creation of Adam’ (Schilperoord and Cohn 2021), the famous photo of ‘Raising the Flag at Iwo Jima’ (Schilperoord 2013), or the immediate proliferation of memes that substitute or add to another viral graphic depiction. All of these examples establish predominantly diagrammatic iconicity to another graphic representation, in what has been called a ‘visual optimal innovation’ (Arts and Schilperoord 2016). This follows from work on verbal optimal innovations (Giora et al. 2004), whereby an established phrase (ex. ‘weapons of mass destruction’) can be used as a base for subsequent variation (e.g. ‘weapons of mass deception’). In all these cases, the novel production (the ‘innovation’) establishes diagrammatic iconicity to the referred-to form (the ‘base’).

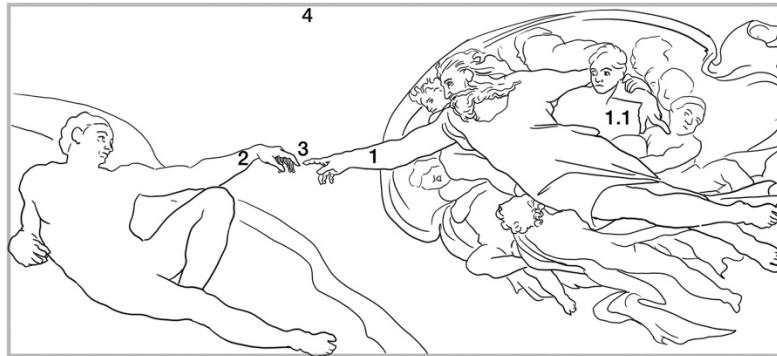
In some cases, visual optimal innovations may just invoke the base as the signification of their diagrammatic iconicity. For example, many comics make homages to the cover of ‘Amazing Fantasy #15’, which depicts Spider-Man in his first appearance swinging over a cityscape carrying a man under his right arm. Other covers have depicted different characters in this same pose, holding various people or objects under their arm. In these cases, the diagrammatic iconicity draws a connection to the comic cover, thereby honoring and establishing a link to the history of comics. In such examples, the base is the semiotic object referenced by the innovation through diagrammatic iconicity.

In other cases, visual optimal innovations might use their diagrammatic iconicity to inherit conceptual properties from the base which can inform or comment on the relationships of the depicted elements in the innovation. Consider Figure X.5a, which uses Michelangelo’s ‘Creation of Adam’ painting as a base. In the original, God is shown floating surrounded by angels, extending a finger to a resting Adam, who is implied to receive the gift of life. In Figure X.5a, Donald Trump substitutes for Adam, with the Devil substituting for God and surrounded by unsavory colleagues like Vladimir Putin and Adolf Hitler instead of angels. The implication is that the Devil (and co.) has gifted Trump with ‘life’, i.e., with his political success.

a)

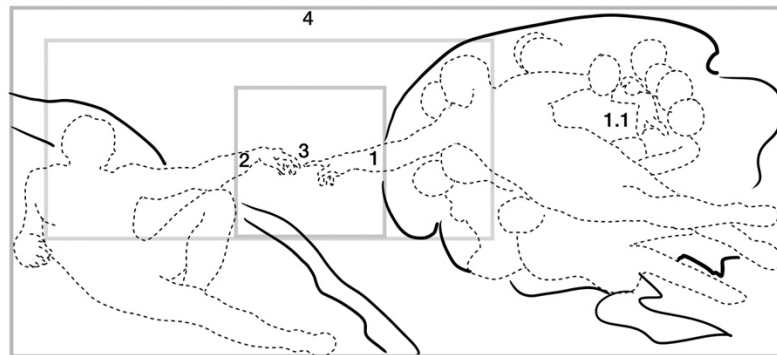


b) Graphic Structure:



Morphology: [Macromorph [Monomorph]₁, [Monomorph]₂, ([Monomorph^{1-1'}]_{1,1})]₄
 Conceptual [event GIVE ([entity ACTOR: GOD]₁, [entity BENEFICIARY: ADAM]₂, [entity OBJECT: LIFE]₃)]₄
 Structure: [entity ANGEL^{1-1'}]_{1,1}

Graphic Structure:



Morphology: [Macromorph [Monomorph]₁, [Monomorph]₂, ([Monomorph^{1-1'}]_{1,1})]₄
 Conceptual [event GIVE ([entity ACTOR: ____]₁, [entity BENEFICIARY: ____]₂, [entity OBJECT: ____]₃)]₄
 Structure: [entity ____^{1-1'}]_{1,1}

Fig. X.5 a) A visual optimal innovation of the Creation of Adam painting with Donald Trump and the Devil. b) The schematized lexical entry of the original painting (top) which serves as the base for the abstracted template used in the visual optimal innovations (bottom).

Many visual optimal innovations use the Creation of Adam painting as a base, to the extent that it appears to have become a stored visual lexical item (Schilperoord and Cohn 2021). The structure of this lexical item appears in Figure X.5b. A comprehender stores knowledge of

the original Creation of Adam painting, along with its meaning of God giving life to Adam. An abstracted template references this base with correspondences to its form (the two figures reaching to each other). These forms are thus ‘monomorphs’ uncoupled from their original tokens (God, Adam), which are incorporated into an abstract aggregated scene-level ‘macromorph’. This diagrammatic iconicity between forms thereby corresponds to a generalized meaning inherited from the base, with slots for a beneficiary (the Adam role) who receives something (originally, life) from a benefactor (the God role). That is, the graphic form maintains a diagrammatic iconicity to the original painting and as a result establishes that the innovation has a creatively alterable diagrammatic iconicity to the meaning of the base.

Visual optimal innovations like these proliferate throughout people’s visual lexicons. It is worth noting that without recognizing the base, a comprehender may establish this pattern as a fully abstracted visual lexical item. In this case, the template and its meaning may still persist, but the diagrammatic iconicity would be lost.

X.5 Iconicity with symbolcity

More complex representations may incorporate iconicity into other semiotic construals. Consider first the element on the forehead of the character in Figure X.6. In the Japanese Visual Language used in manga, this shape represents a ‘popped vein’ with the meaning that this character is angry. To arrive at this meaning of anger, several different ‘cycles’ of form-meaning correspondence need to occur. First, this representation was originally drawn in a more realistic representation to look like a vein. This would be an idiosyncratic iconic representation of an actual vein, which would then be ‘indexical’ of anger—i.e., a vein popping out of someone’s head might indicate a physiological response arising because they are angry. Through systematization of this representation, it then becomes an iconic conventionalized form as in Figure X.6a, and if its iconicity is no longer recognized, it would then become a purely symbolic conventionalized form. Indeed, the manga vein not only occurs on characters body parts to mean anger, but it can also float near a character’s body or even be placed in speech balloons to indicate angry speech (Shinohara and Matsunaka 2009).

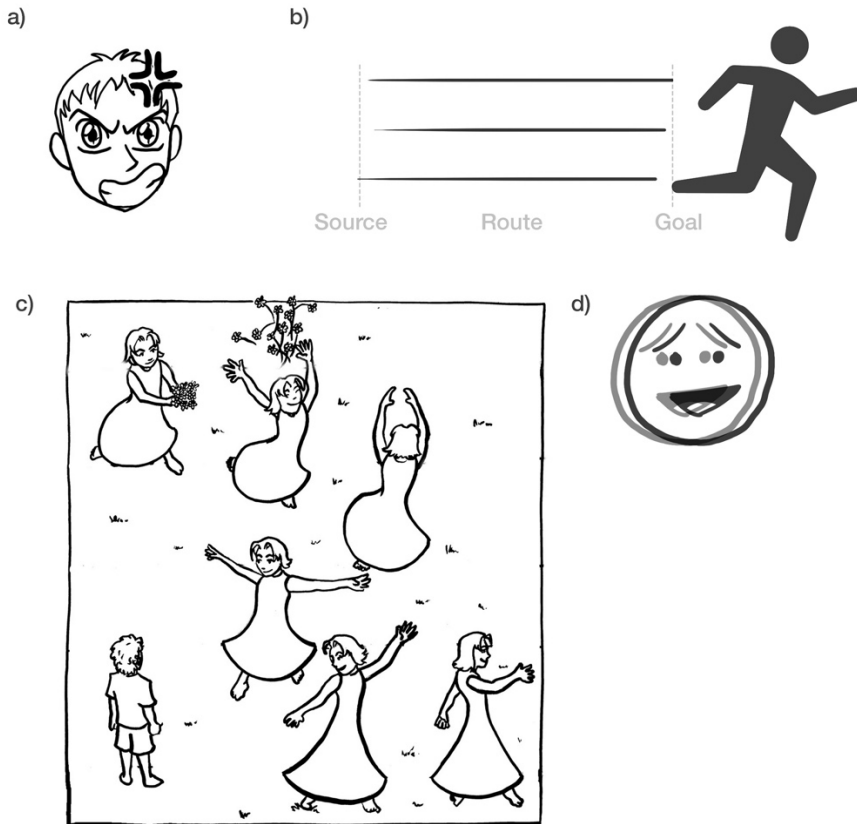


Fig. X.6 Various examples of visual morphology including a) the manga vein indicating anger, b) a motion line depicting a path, c) reduplication of a girl dancing to show movement, and c) reduplication of lines to show shaking.

The manga vein is also noteworthy as a type of ‘bound morpheme’—it cannot stand alone and must attach to another morphological ‘stem’ (like a person, but for the vein, also near a person or in balloons). Other bound morphemes involve the motion lines that indicate movement, hearts substituted for eyes, or elements like gears that float above character’s heads, among many others (Cohn 2013, 2018). In the sense that these visual affixes are dependent on their full interpretation through their relationship with another element, they are indexical of their stems. For example, a speech balloon that shows its tail extend to the edge of a panel implies that the speaker is out of view, not that there is no speaker. Through this indexical relationship, these bound morphemes may modulate the properties of the iconicity of a stem by providing additional meaning or elaboration. The person’s iconic facial expression along with the manga vein both reinforce the meaning of anger, but they are linked through an indexical relationship.

Other bound morphemes may create further complex relationships with iconic signification. This particularly occurs with the range of elements that float above characters’ heads, which have been argued to be a class of visual affixes which are ‘up’ from a head, and thus are called ‘upfixes’ (Cohn 2013). Upfixes generally depict mental or emotional states, making them indexical of the emotions of the character, and this correspondence is maintained visually in ‘agreement’ between the face and upfix. A storm cloud above the head indicating anger or sadness is congruent with a sad face, and not with a happy face, while a lightbulb above

the head is congruent with a happy face, but not a sleepy one (Cohn and Foulsham 2022; Cohn et al. 2016).

Upfixes themselves use a range of signification. Hearts, exclamation marks (!), or question marks (?) as upfixes use symbolic representations to derive their meanings of love, surprise, or curiosity respectively. However, other upfixes play with iconicity in a variety of ways. Bubbles above the head represent drunkenness; they are iconic of bubbles, which could stem from an actual iconic representation of bubbles coming from a person's mouth, such as from stereotypical drunken burping.

More complex construal is involved with a storm cloud to indicate sadness or anger. On the one hand, a storm cloud is iconic of a type of weather (clouds and rain), and its placement above a head introduces a diagrammatic iconicity of raining on a person. Indeed, like all upfixes, when it is moved next to the head, this meaning becomes less forthcoming (Cohn et al. 2016). Yet, the construal of sadness or anger from the storm cloud is not simply because of its effect of iconically raining on the person. Storm clouds also invoke a metaphoric iconicity broadly of 'emotion is a natural force' (Shinohara and Matsunaka 2009; Szawerna 2017). In this case, the iconic cloud (a natural force) is indexical of anger (an emotion) situated within a larger conceptual metaphoric frame (Kövecses 1986), which is in turn indexical as a bound morpheme with the emotion of the stem facial expression.

A similar relationship operates with the lightbulb upfix to mean inspiration. On the surface, the lightbulb uses imagetic iconicity to an actual lightbulb, yet there is no direct iconic correspondence between a lightbulb and inspiration. In addition, a lightbulb above the head has no diagrammatic correspondence to a head other than lights perhaps in raised-up lamps or ceilings which are typically placed above heads, unlike the diagrammatic iconicity of storm clouds hovering above people and raining down on them. Like the storm cloud, the lightbulb also invites a metaphorical interpretation with a frame of 'seeing is knowing' (Grady 1997; Lakoff 1993), where the bulb corresponds to a mind, and the light going on corresponds to the 'mind going on', i.e., having an idea. Such a correspondence can thus become entrenched enough to constitute a symbolic signification for an iconic convention.

Another form of metaphoric iconicity comes from alteration of graphic elements. For example, in the Japanese Visual Language used in manga, anger can be shown by characters suddenly changing across a panel to have an angry yelling head multiple times larger than the whole body of other characters. This convention of a Giant Yelling Head (Cohn and Ehly 2016) thus uses imagetic iconicity as a depiction of a face and its emotion but with an incongruous sizing. Here, the size of the head is diagrammatically iconic to the magnitude of the emotion (bigger head means bigger emotion), which ultimately yields a form of metaphoric iconicity ('physical magnitude is emotional magnitude').

A different type of reference in an affix comes from motion lines, which trail a moving object to represent motion. Motion lines have been claimed to use several types of signification. One proposal posits that they represent an imagetic iconic depiction of the 'motion streaks' that are left behind in the visual system when seeing a moving object (Burr 2000). An entirely opposite argument posits that motion lines are not 'literal' (i.e., iconic) and thus are 'metaphoric' (Juricevic 2017), although it is unclear just what in this proposal they are 'metaphoric of' other than motion.

Consider a different perspective, which is that motion lines maintain a diagrammatically iconic correspondence to a conceptualized path. Paths are basic conceptual primitives (Jackendoff 1983, 1990; Talmy 2000), composed of a source (its starting point), the route (its

middle trajectory), and a goal (its endpoint), as illustrated in Figure X.6b. Motion lines diagrammatically correspond to this basic conceptualization, with the start of the line implying the source, its middle corresponding to the route, and the location of the moving object being placed at the goal. The sense of movement thus comes from the indexical relationship of the moving object to this path, with the implication that the object was previously located at different states along this path, and thus the object moved *from* its source *to* its goal, *via* its route.

Another way to show movement in visual morphology extends beyond affixation—i.e., attachment—and instead uses *reduplication*, i.e., the repetition of elements (Cohn 2013, 2018). Consider Figure X.6c, where we see a boy watching a girl who is repeated several times with different postures. If this was interpreted purely as an imagetic and diagrammatic iconic depiction, we would see multiple girls in the frame who all happen to look similar. While this is a possible construal, the repetition of the character could also push you to infer coreference across those repetitions (i.e., that they are the same person), and because of that coreference, the depiction is not simply a static single moment in time. Rather, the change of state across those figures can lead to an inference of their movement. This would again suggest diagrammatic iconicity, mapping each figure onto space diagrammatically onto a temporal/event structure. Such a process would be similar to what occurs in the coreference across panels but here segmented into a single panel.

Another type of reduplication appears in Figure X.6d. Here, jittered lines are reduplication of the sensory signal, which like the full repetition of figures in different postures can represent a diagrammatic iconicity of a single imagetic iconic representation across time. Within this diagrammatic iconicity, this representation is actually polysemous and can correspond to at least two possible meanings. First, the repetition of lines could suggest that the person themselves is shaking, with the jittered lines each reflecting the placement of the body iteratively in different locations at different moments. A second interpretation shifts the locus of the movement from the object to the viewer. That is, this graphic representation is perceived as the viewpoint of a person seeing double, perhaps due to their shaking or being drunk.

X.6 Conclusion

We have hopefully demonstrated that iconicity permeates throughout the graphic modality in rich and complex ways. Because graphics often resemble what they mean, it may give the impression that they are simple to comprehend and require only basic perceptual processing, while also lacking the complexity found in the vocal or bodily modalities. Yet, as we have argued, the graphic modality uses encoded conventional forms at numerous levels of complexity (micromorphs, monomorphs, macromorphs, bound morphemes). These encoded forms can correspond to conceptual representations using various types of iconicity, indexicality, and symbolcity, and such signification may use multiple correspondences or layered signification. These form-meaning mappings can be encoded in the memory of comprehenders to constitute the items of a lexicon of visual languages, while other signification may be determined pragmatically in context. Altogether, naïve views of the iconicity of graphic information both underestimate the complexity of the graphic modality, and the possible complexity of iconicity itself.

1.8 References

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