

Understanding Art: MIC and the Inverse Fractal Analysis of Art

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Introduction

The Multilevel Integrative Cognition (MIC) model of conceptual analysis, also known as fractal-concept analysis, is an attempt to bridge the gap between objectivity and subjectivity in epistemology, creating a four-dimensional model by which a more comprehensive method of analysis may be utilized (Wilson and Lowndes, 2003). As fractal-concept analysis, these four dimensions take one specific idea and branch out four ways, each of which may also be divided and sub-divided into the four dimensions: static, dynamic, evaluative, and identity (Wilson, Wasserman, and Lowndes, 2007). When applied to the analysis of works of visual art, this method bears significant similarities to Kendall Walton's theory of artistic categories (Walton, 1970) and also shares properties with Arthur Danto's process for identifying works of art as belonging to particular types (Danto, 1964). Walton and Danto both begin with a general concept and examine specific aspects of it, whereas MIC/fractal-concept theory begins with a specific seed idea and works outward towards a general concept.

I propose that the fractal model may be turned upside-down: instead of the trunk of a tree growing from a seed and branching out in multiple directions, I see it as the trunk of a tree supported by a large root system, without which the tree will not stand. The trunk of the tree represents the idea "What is a work of Visual Art?" The tree's roots are all the various manifestations of the ways in which this idea might be expressed, each root ending in a specific work of art. Within this root system, each work of art can be traced back, through shared conceptual paths, to the overall designation as works of visual art. This method of identifying objects as works of art bears similarities to Ludwig Wittgenstein's "Family Resemblance" theory (Warburton, 2003) and also to Noel Carroll's method of "historical narration" of art works (Carroll, 1999).

MIC

At the heart of MIC is the idea that any concept can be analyzed in four dimensions. These four hierarchical dimensions are widely applicable across a range of different areas of study (Wilson, Wasserman, and Lowndes, 2007).

Level	Biology	Research	Visual Art	Humanities ¹	Education (Bloom's Taxonomy)
Static	Elements, Minerals, Non-living matter	Fact finding; literature review	Space and form—physical aspects of the work of art	Physical Body; Sensory experiences	Knowledge (facts) Comprehension
Dynamic	Plants: presence of life (physical processes) without consciousness	Methods: actions conducted in order to gather new data	Artist's technique; Time and movement— suggestion of actions or movement in the composition	Bodily processes; Action Movement; Instinctive or unconscious behavior	Application: Using information in new situations in order to solve problems
Evaluative	Animals: living beings capable of independent movement; consciousness without sentience	Analysis or interpretation of data	Interrelationship of visual elements (static and dynamic); Message; critique of aesthetic factors (ex: beauty)	Feelings Emotions Decisions Conscious/willed behavior	Analysis: Examining organizational structures, comparing-contrasting,
Identity	Humans: still greater levels of movement, independent action (free will), ability to identify "self" and "other", metacognition; sentience	Conclusions: Generation of concepts or theories	Type/Essence Insight Inspiration	Values Reflexive thought	Synthesis: applying prior knowledge to produce a new whole Evaluation: judging the <u>value</u> of material based on <u>personal</u> values or opinions

The four levels of the MIC/fractal-concept analysis model may also be broken into sub-levels, each of which may also be examined in a four-fold manner. Just as a written document has an overall structure of introduction, exposition, analysis, and conclusion, within each chapter of the document this pattern will also become evident with an introductory paragraph, body paragraphs of exposition and analysis, and a concluding paragraph. Furthermore, each paragraph would show an introductory sentence, a body of expository and analytical sentences, and a conclusion sentence. Thus, each of the four levels may be divided and sub-divided

¹ Use of the word "humanities" here indicates a traditional understanding of branches of study such as psychology, sociology, philosophy, and so on.

according to the same four levels, resulting in multiple different points of analysis. In theory, this process of division and sub-division may be carried out many times, depending on the complexity of the item under consideration (Wilson and Lowndes, 2003). It is important to note that the analytical process of MIC begins with a specific concept and works outwards to a larger generalization or theory.

MIC and Forensic Analysis

The areas of forensic investigation and diagnostic medicine both provide demonstrations of analysis according to a hierarchical model that dovetails well with MIC. This pattern is clearly evident even in television shows built around these branches of investigation such as two shown on the Fox Television network: *Bones* (2009), a crime drama in which the main character is forensic anthropologist Dr. Temperance Brennan, and *House* (2009), a medical drama surrounding the character of Dr. Gregory House, a specialist in making difficult medical diagnoses. In each episode of these shows there is a mystery to solve: highly trained scientists examine static and dynamic evidence, conduct an evaluation of their findings, and arrive at a conclusion in which the criminal is identified or the medical condition is diagnosed.

	<i>Bones</i>	<i>House</i>
Primary Analyst	Dr. Temperance Brennan Forensic Anthropologist	Dr. Gregory House Diagnostic Medicine, Epidemiologist
Problem	Identifying a murder victim and determining cause of death, leading to apprehension of the murderer.	Identifying a disease or medical condition that is causing a patient’s illness, followed by appropriate treatment.
Static	<ul style="list-style-type: none"> • DNA • Fingerprints • Organic and inorganic particulates • Human remains: <ul style="list-style-type: none"> ○ autopsy results ○ skeletal markers • Dental records 	<ul style="list-style-type: none"> • Patient symptoms • Medical test results: <ul style="list-style-type: none"> ○ blood work, ○ CAT scans/MRI, ○ X-rays, • Patient’s medical records/previous medical history
Dynamic	<ul style="list-style-type: none"> • Eyewitness accounts • Interviews of suspects • Observation of human behavior/applied psychology • Facial reconstruction • Digital enhancement of technological evidence (computer hard drives, surveillance video, audio recordings) • Reconstruction of potential scenarios involving the murder, either technological simulations or modeled by characters • Experiments conducted in order to prove/disprove the scientist’s speculations regarding physical evidence. 	<ul style="list-style-type: none"> • Patient interviews • Search of patient’s home or workplace • Interviews with family members/friends of patient • Medical tests or procedures
Evaluative	The team of scientists considers all of the available static and dynamic evidence. They carefully avoid speculation or conjecture and focus exclusively on	The team of highly specialized doctors performs a “differential diagnosis”, discussing all of the static and dynamic evidence, proposing various theories

	the confirmed facts of the case. Using both inductive and deductive reasoning, they attempt to answer questions leading to the identification of the victim, murder weapon, criminal, and so on.	until a decision is reached. A course of treatment is administered to the patient. If it has positive results, a confirmation of the doctors' diagnosis is achieved. If not, further evaluative activity is conducted and a different course of treatment is attempted.
Identity/ Self	Successful identification of the victim leading to the arrest of the murderer.	Successful diagnosis of the medical condition.

One of the unifying themes of these television shows is that the persons conducting the investigation are highly trained specialists: on *Bones*, several of the characters hold multiple PhDs; on *House* the characters are medical doctors with specialized training in areas such as neurology, immunology, oncology, and epidemiology. Holding such qualifications implies substantive background knowledge and extensive prior experience on the part of the persons conducting analysis. Because the audience watching the television show does not possess equivalent background knowledge, enough explanation is given of the various processes involved (medical tests, scientific research methods...) that a viewer can understand the conclusions drawn by the characters. For instance, on an episode of *Bones* ("Hero in the Hold", Episode 414, original air date 02-05-2009) Dr. Jack Hodgins, reports that he has run the particulates found on the soles of a pair of boots through the mass spectrometer and has determined them to be paint fragments of a type formerly used in the deck coatings of naval vessels. The viewer does not need to understand the workings of a mass spectrometer or know the exact chemical composition of deck coatings—it is enough that a character seen as being an expert has provided sufficient evidence as to make the identification logical and believable. As viewers, we trust that Dr. Hodgins has performed an appropriate scientific test and that his results are accurate. The same is true on *House*: as audience members, we believe that the doctors are applying highly specialized medical knowledge in order to reach an accurate diagnosis. Even though the situations are fictional, both television programs employ teams of real-life expert consultants who check the scripts and verify that the psychological, anthropological, scientific, medical, legal, and technological aspects of the episodes are factual. Expert knowledge is at the foundation of the analysis found in every one of these shows.² In MIC, the leap from the Evaluative level to Identity can

² Of course, any television program is bound to take some artistic license and may present certain things as facts for the sake of the show. The public, however, can be a demanding and discerning audience, spotting obvious falsehoods and then flooding the shows' online fan forums with criticism. Dr. Kathy Reichs, the real-life forensic anthropologist and creator of the character Dr. Temperance Brennan, serves as a producer and/or consultant on *Bones*. In an interview she said, "I see my involvement as a chance to keep the science real" and also, "I'm fastidiously conscientious about getting the science right" (Stanford, 2006). The website for *House* includes links to research about the medical facts behind each show: <http://www.fox.com/house/features/research/season6.htm>. Despite the artistic license, therefore, each show strives to present authentic and factual information.

oftentimes only be made correctly if the analyst possesses a similarly high level of background knowledge and experience pertinent to the given investigation. If the investigation is more commonplace, specialized knowledge is not vital. For instance:

- I see a large brown dog with a smooth short-haired coat, floppy ears, and a muscular tail (static).
- It is enthusiastically playing fetch with its owner (dynamic).
- These characteristics are consistent with those of a Labrador Retriever (evaluative).
- Therefore, the dog is a Labrador Retriever (identity).

I do not have to be a veterinarian or a canine expert to make this identification—everyday knowledge is sufficient. However, this is not the case in every situation. The more complex the proposition, the greater the necessity for specialized knowledge in order to make a correct identification. It is not necessary for the audience/reader/viewer of an MIC analysis to possess this background knowledge, but the person conducting the analysis must make his/her prior knowledge or expertise transparent within the analysis and not take as a given that the audience shares a similar wealth of knowledge. It may be “obvious” to a musician that a recording by a particular popular music group used a drum machine instead of a live drummer, but the average listener would likely be hard-pressed to discern such a subtle difference. Likewise, a photograph might “clearly” be the work of Cindy Sherman to someone well-versed in photography, but to the average viewer, the photograph might just be rather strange and unappealing. However, if the person who identified the photograph takes this a step further and explains *how* and *why* the photograph has been identified as such, the analysis works much better. Oftentimes there are mysteries to be solved regarding works of art: identifying the creator of an unsigned work, determining the exact materials used in the creation of a work, verifying the timeframe of a work’s origination...in situations such as these, as well as many others, careful analysis by a highly-trained expert is valuable. MIC/fractal concept analysis provides an excellent framework in which to structure this type of investigation.

MIC and Social Theory

Perhaps one of the best applications for MIC/fractal concept analysis is in determining the ways in which different social theories may be discovered in works of visual art. When read in this way, many works of art can yield evidence of multiple social theories. In order to demonstrate this, an analysis of *American Gothic* by Grant Wood, a painting on display at the Art Institute of Chicago, can provide multiple examples of interpreting a work in terms of social theory. This work is perhaps one of the most famous paintings in the history of American Art, and has been the subject of intense interest since it was painted, emerging into the public eye in 1930, when it won a \$300 third-place prize in a contest held by the Art Institute of Chicago (Biel, 2009). MIC analysis of this

painting can result in the discovery of a wide variety of potential social theories that may be interpreted from the work.

Static: The painting is oil on beaverboard, measuring 74.3 by 62.4 cm. It is part of the “Friends of American Art Collection” at the Art Institute of Chicago (AIC, 2009). It depicts a Caucasian/White man and woman posed in front of a white Gothic-revival-style house, on which an upstairs window resembles a medieval pointed arch. There is an embroidered or embossed curtain or window shade in this window featuring a small white geometric pattern and a scalloped edge at the bottom. This three-part window is echoed throughout the painting’s composition: the man, woman, and house form a triad, the three tines of the pitchfork in the man’s hand are a triad, and the faces of the man and woman each also echo this theme in their arched eyebrows, long noses, and high foreheads. The man wears round steel eye glasses, has dark brown eyes, and is looking straight out from the painting, seemingly at the viewer. The woman is posed slightly behind the man and looks obliquely at him, not at the viewer. Her eyes are light blue. Neither figure is smiling; both wear severe expressions. The man is balding and has a lined face and wrinkled neck. He wears a white, collarless shirt, faded denim bib overalls, and a dark suit jacket. The pocket on the bib of his overalls, the pale vertical-stripe pattern of his shirt, and the lines and wrinkles on his face all echo the proportions of the window and of the pitchfork. One of his hands is visible at the center of the bottom edge of the painting. He is gripping the pitchfork’s handle near the tines, approximately in line with his waist.

The woman’s face is smooth and her blonde hair is pulled back into a bun at the nape of her neck, with one loose tendril curling slightly between the back of her right ear and the top of her collar. She wears a black dress with a high white collar and a cameo pin at the throat, covered by a dark brown calico apron with white rick-rack trim. Her hands are not visible. In the background, potted plants can be seen on the porch of the house, just behind the woman’s right shoulder.

Between the two figures, the rectangular downstairs windows of the house are visible. The plain window shades are drawn down nearly to the sill inside. Behind the man’s left shoulder, the gable end of a red barn can be seen. The sky is blue, and the tops of green trees show above the house and barn. The torsos of the man and woman fill the lower half of the frame, extending from the woman’s right shoulder to the man’s left. At the center top of the picture, at the peak of the house’s roof directly over the window, there is a lightning rod. This verticality is echoed by a distant spire or steeple over the tops of the trees, behind the house and to the woman’s right. The artist’s signature is located at the bottom of the painting over the man’s overalls, just below the waist and towards the man’s left.

Dynamic: The two human figures in the painting appear to have posed for their portrait. Although they are standing motionlessly, the man is actively looking forward, towards the painter and/or the viewer of the picture.

His gaze may suggest awareness of the fact that he is being painted. His eyebrows are slightly raised and somewhat drawn together, giving his forehead a wrinkled appearance, expressing interest, concentration, and/or slight apprehension. His expression may also be seen as challenging the viewer/painter. The wrinkles around his mouth are more relaxed than those on his forehead. The mouth is set in a straight line. The man's right hand is just visible in the bottom of the painting, gripping the handle of the pitchfork. His hand holds the handle firmly, but not aggressively, giving the sense that he has control over the implement and is comfortable handling it. The man's overalls are faded, worn, and stained. This gives evidence that he is accustomed to strenuous physical labor on the farm. The handle of the pitchfork is also worn, also giving evidence of extensive use.

Although the woman in the painting is also facing the painter/viewer, her body is oriented slightly towards the man, and her gaze is aimed at him, seeming as though she is looking at his right cheek. Her eyebrows are drawn together, causing a small bump above the inner corner of her brows. Her focus seems to be rather intently on the man, which is a marked contrast to his focus on the painter/viewer of the painting. Her mouth is also set in a straight line as his is, but lines extend downwards from the corners of her mouth, giving the effect of worry, anxiety, or perhaps sadness. Her arms hang straight down at her sides, and nothing of her body is seen except for the bodice of her apron. She does not have a visibly female form: no curves for breasts, waist, or hips can be seen, giving her the impression of having a rather boyish physique. Her clothing is distinctly modest. Her collar is fastened tightly at the base of her neck by a cameo pin. Her dress is plain black with a plain white collar. Slight unevenness and visible stitching on the collar suggest that the dress was handmade, not purchased from a store. Her apron, although patterned and trimmed with white rick-rack, suggests austerity with only a slight nod to femininity. An apron is worn to protect a woman's clothing from household cleaning and cooking, but the apron of the woman in the painting bears no evidence of her domestic chores or tasks—it is pristine and clean, with no stains, no dirt, and no food residue.

The house and barn in the background are each weathered but in good repair. The trees behind the house and barn are unnaturally rounded and uniform, giving a stylized appearance to the work. The painter has paid close attention to the individual boards of the buildings' siding, their roofing materials, and even the rivets at the edge of the barn's roof. Every detail stands out in the sunlight of the scene. This attention to detail lends itself to the human figures in the picture, giving an impression that they, too, pay close attention to small details.

Evaluative: The clothing and appearance of each of the two human figures in this painting, their poses relative to the painter/audience and to each other, result in multiple ways in which the relationship between this pair of figures may be interpreted. One theory is that they are husband and wife, another possibility is that they are

brother and sister; however, there seems to be a distinct age difference between the two people. The man is balding and has far more wrinkles than the woman, whereas her hair has no gray and her face and neck are firmer and smoother than the man's. The shapes of their heads are similar, and there are further similarities in the structure and placement of their facial features. Because of the facial similarities and the apparent age difference, among the common readings of the picture is that they are a father and his adult daughter. Presumably, for the daughter to be posing for this picture with her father, she is unmarried. If the female figure is the daughter, the absence of a wife/mother may suggest that the father is a widower and that the unmarried adult daughter has assumed responsibility for the farm's domestic duties. Whether they are husband and wife, brother and sister, or father and daughter is left ambiguous by the painter.

The male figure appears to have assumed the leadership role in the relationship, gazing outward warily and seemingly protecting the female with the pitchfork. His appearance suggests that he is responsible for the outdoor work of the farm, while her apron gives the impression that all of the indoor chores are her domain, possibly representing a traditionally patriarchal division of labor. In focusing her gaze on him, the female figure may be interpreted as indicating her subservience to the male figure, appearing to nervously watch him for cues to her subsequent behavior, or she might be seen as looking towards him for protection or guidance, fearful of outside forces. Whether her facial expression indicates fear of him or fear of the unknown outside world is ambiguous. He stands in front of her, which may either be seen as a gesture of dominance or of protectiveness. These clues may be seen as indicators to a reading of the image as having a patriarchal message.

Socioeconomically, the word "American" in painting's title "American Gothic" could be seen as an indication of the painter's intention that the figures are representative of America itself. Since they are white, are seemingly middle-class, and live in middle America (Iowa), the middle therefore becomes *the* national identity, according to this interpretation. Their high collars and somber expressions could seem to give the feeling of Puritanical, fundamentalist, rigid, straight-laced, repressed or oppressive belief (Biel, 2005). On the other hand, the painting has also been viewed more positively, as a celebration of the hardy individuals who form the backbone of American culture, promoting the value of regional culture and even of patriotism (Miller, 2005).

The word "Gothic" is often taken to refer to the Gothic architecture of the building in the painting's background as evidenced by the style of the upstairs window; however, "gothic" can also allude to the dark, the hidden, or the satanic. The pitchfork itself is often symbolic of Satanism, and this object is prominent in this painting. Could this hint at a situation far worse than patriarchy, perhaps of a secretly incestuous relationship between the two figures? There are voices that have speculated as much (Biel, 2005). Or is it less complicated than that? "It gives a twist to the picture if you think of those jokes about the father's daughter, protecting her

virginity with a pitchfork...and that gives another twist on 'gothic' as well" (Mel Adringa, Cedar Rapids, IA artist, quoted in Gray, 2002).

The Art Institute of Chicago's "Art Access" website gives succinct background information for the painting:

[Grant Wood] was enchanted by a cottage he had seen in the small southern Iowa town of Eldon. Its Gothic Revival style, indicated by the upper window designed to resemble a medieval pointed arch, inspired the painting's title. He asked his dentist and his sister Nan to pose as a farmer and his unmarried daughter. The highly detailed style and rigid frontal arrangement of the figures were inspired by Northern Renaissance art, which the artist studied during three trips to Europe. After returning to Iowa, he became increasingly appreciative of the traditions of the Midwest, which he also celebrated in works such as this. *American Gothic* remains one of the most famous paintings in the history of American art. It is a primary example of Regionalism, a movement that aggressively opposed European abstract art, preferring depictions of rural American subjects rendered in a representational style. (2004)

From its introduction in 1930 until the present day, conflicting interpretations have surrounded this painting. The artist rejected suggestions that he was attempting to satirize Midwestern culture's repressive narrow-mindedness—a view that seems to be among the most common interpretations of the work (Biel, 2009). Others have praised the painting for celebrating the moral virtue of rural America (AIC, 2009). Whatever the artist's intentions may have been, it is clear that viewers have never reached consensus about the painting, its messages, or its meanings even nearly 80 years later.

Identity/Self: There are several aspects of social theory related to gender, race, and class that may be identified in this painting.

Feminism: The feminist implications commonly identified in this work relate to the treatment of the two figures in the painting: the woman's gaze and physical orientation towards the man, his standing in front of her and holding the pitchfork, the details of their clothing and appearance: these details all might be interpreted as suggesting a patriarchal situation in which the woman is subservient to and/or dependent on the man (Miller, 2005).

Racism/Classism: The racist/classist idea that white, middle class people provide an archetypal representation of America is also a common rendering of the image, as is the implication that rural culture provides a superior representation of American life than an urban setting. The 1920s had represented a shift in American society towards urban life, away from America's rural roots, so this emphasis on rural America was pointed even at the painting's debut in 1930 (Gray, 2002). The man in the painting has put on a suit jacket over his shirt and overalls, an attempt to dress up for his portrait. The woman is also wearing a cameo pin on her dress and she is impeccably clean. These clues might suggest that they aspire to a higher social class than that of mere farmers, also reinforcing the middle class emphasis of the painting.

Species-ism: A more subtle social theory may be read in choice of a pitchfork as the male figure's chosen farm implement. A pitchfork is primarily used on a farm in the keeping of livestock, either to pitch fresh hay into animals' mangers or in cleaning soiled straw out of stalls. This could suggest a traditionalist reading of human beings holding mastery over animals, even though no animals are actually visible in the picture. The pitchfork may imply the existence of animals on this farm and their use by humans as a commodity, a point of view that could be considered offensive to those concerned with animal rights and/or species-ism.

Morality/Lifestyle: The buttoned-up clothing, severe expressions, and overall rigidity of the figures suggest that these figures live an austere lifestyle of moral uprightness, if not prudishness (Miller, 2005). The pitchfork may serve as a warning to the potential suitors of the farmer's daughter, acting as a safeguard for her virginity. Conversely, a more positive spin may be taken of this pair, and they may be seen as exemplifying the American values of hard work, self-reliance, and moral virtue (Gray, 2002).

Whatever Wood's intentions may have been, whether the painting itself was intentionally satirical or not, the work itself has been the subject of countless parodies nearly since its inception. To conduct a Google image search of "American Gothic" results in many satirical renderings of the image. It has been used as a prop for social theory in its original form and in parodies conducted for a wide variety of reasons. In the original, or in a parody, this iconic image is laden with social theory, and is likely to remain so.

MIC and Kendall Walton's "Categories of Art"

The four-level analysis of MIC as applied to *American Gothic* results in the discovery of many intriguing ideas. Other philosophers and theorists have also suggested ways in which to understand works of art. Kendall Walton, in his essay "Categories of Art" (1970), proposes that works of art are understood within the context of their placement with particular categories of art, an evaluation that is based on the physical properties of the work itself and also on the viewer's knowledge of the work's historical context. Works of art may possess standard, variable, and contra-standard properties, the presence or absence of which determine the work's placement within a given category of art. Standard properties are those that are usually taken for granted in a category. For instance, photographs are flat, typically produced by a specific mechanical and chemical process. The image in a photograph remains two-dimensional even though it produces the illusion of depth, and it remains still, even though it may depict a figure in motion. We take the two-dimensional and motionless qualities of photographs for granted since they are standard properties. On the other hand, it is a standard property of film that the projected image appears to be in motion, even though it is actually a series of still photographs projected in rapid succession merely giving the illusion of movement. Standard properties are generally only noticeable if they are absent from a work of art. In music, a piano sonata follows certain rules

and conventions for sonatas and is performed on a piano. To perform it on a cello, for instance, would exclude the standard property of being performed on a piano, and this absence would be noticeable.

The variable properties of a work are those that are different from one work to the next, giving it uniqueness or individuality. The particular arrangement of notes varies from one musical work to another. The subject of a photograph, the size and shape of a sculpture...all of these are variable relative to a particular category. Variable properties tend to fall within a certain range in a given category, and an object's manifestation of these properties determines value judgments about the object. Moving to a third level, a work of art may also exhibit what Walton refers to as contra-standard properties: qualities that, if present, may serve to exclude a work from a particular category. It is a standard property of paintings to be flat; were an artist to create a painting with spikes of metal protruding from the canvas, the work would no longer be flat and might cease to be included in the category of painting. The presence of a contra-standard feature in a work of art causes the viewer to engage in evaluation of both the work and the category. Thus, in the case of the painting with protruding metal spikes, either a new category must be established—that of three-dimensional painting—or the category of painting must be modified to include both two- and three-dimensional objects, subsequently enlarging the variable properties of paintings. History has shown that properties which are initially contra-standard, and often highly controversial, may become variable and even standard with the passage of time as viewers become accustomed to the presence of these properties.

There is an interesting correlation between Walton's categories of art and the four levels of evaluation inherent in MIC analysis of a work of art. The standard properties of a work of art are comparable to the static level of analysis: in each case, these relate to the basic elements of the work of art. The variable properties of a work of art correlate with the dynamic level of MIC analysis: qualities that change from one work of art to another within a given category. The properties that make a work unique such as the artist's use of formal elements, selection of subject matter, the skillfulness of the artist's technique, and other similar qualities all relate to the dynamic nature of the work. The contra-standard properties of a work of art demand evaluation, which is also the third level in MIC analysis.

At the first three levels, the correlations are fairly apparent, but the fourth level, identity/self, is not explicitly articulated in Walton's work. However, one of Walton's main premises is that the viewer's personal familiarity with a category facilitates his or her ability to identify a work of art as belonging to the category. Walton represents a work of art as *W* and a given category as *C*, giving four considerations by which it is correct to perceive *W* as being a member of *C*, all of which relate to the four levels of MIC:

First, *W* possesses a significant number of standard features with respect to *C*. This corresponds to the static level of analysis in MIC in that it identifies the standard features of *W*. Second, *W* is in some way better, or

more interesting or pleasing aesthetically, or more worth experiencing when perceived as C than it is when perceived in alternative ways. This corresponds to the dynamic level of MIC, analyzing the variable properties of the work. Third, the artist who produced W intended or expected it to be perceived in C, or thought of it as a C. The artist has made an evaluation of W, placing it within C—the third level of MIC analysis. Fourth and finally, C is a well-established, commonly recognized category within the society in which W was produced. In this case, we reach the fourth level of MIC—identity. We recognize the category within society and identify the work as belonging to this category.

In order to analyze the work of art, the viewer must personally possess the requisite knowledge about the standard, variable, and contra-standard properties of the work of art, and must also apply this knowledge within a framework of prior learning about the history and society surrounding the work in order to form a correct judgment about the work. While Walton may not have added this personal level of expertise as a fourth criterion for analysis, it is clear that it bears a direct relationship to the “identity” level of MIC analysis. Moreover, the presence of a four-level sub-categorization within this level also confirms the similarity between Walton’s theory of categories of art and MIC analysis.

MIC and Arthur Danto’s “Artworld”

Arthur Danto’s essay “The Artworld” (1964) does not correlate with MIC quite as neatly as Walton’s work, but his method of analyzing artworks is also worth studying. Danto also uses a four-level method of evaluation, but his levels are not hierarchical as in MIC. Danto chooses two descriptors, which he terms “artistic predicates” and determines whether each of these descriptors is either present (+) or absent (-) in the given work of art. There are then four possibilities: (+,+), (+,-), (-,+), (-,-). For every possible artistic predicate, there must also be the possibility of it either *applying* (+) or *not applying* (-) to a given work of art. To put Danto’s example into graphic form, he selects the predicates “is representational” and “is expressionist”, applying them to four different styles of paintings.

Is Representational	Is Expressionist	Styles
+	+	Fauvism
+	-	Ingres
-	+	Abstract expressionism
-	-	Hard-edge abstraction

For every column that may be added to the chart, two additional kinds of art [(+) and (-)] are possible. If an artist creates a new style—S, then all other works of art are either S or non-S. Not every artistic predicate is relevant to every kind of art; but on the other hand, there have sometimes been artistic predicates—call one of

these G, for example—that are widely believed to be a defining trait of artworks simply because no one has ever created a non-G artwork before. If a non-G artwork is created, then G cannot really have been a defining trait of that particular class of artworks. For instance, it was assumed that all works of art must represent an identifiable subject—the presence of a subject was taken to be intrinsic to being a work of art. With the advent of non-representational artworks, the representational quality of previous works of art ceased to be a qualification *as art*, becoming only one of many possible artistic predicates (+G and –G).

As in Walton’s analysis, the identification of a work of art is dependent on the viewer’s determination of the presence (+) or absence (-) of various qualities. The chart format is highly flexible, and the descriptors chosen for the categories can be adjusted to a given situation.

Conveys factual information (is not posed or staged)	Emphasis on artistic quality	Photographic Styles
+	+	Documentary photography
+	-	Photojournalism
-	+	Cindy Sherman’s “Film Stills”
-	-	Advertising photography

This chart shows two qualities commonly seen in photographs: the presence or absence of factual information, and the artistic quality of the printed image. Documentary photographs portray factual information and are also examples of artistic quality. Works of photojournalism also convey factual information, but are not produced with the same attention to artistic quality. Cindy Sherman is most famous for her *Film Stills*—self-portraits in staged situations. The photograph is artistic, but the image is fictional. Advertising photography, even though it is intended to convince the viewer that it is factual, is actually staged and misleading (just think: did you ever open the box of your Whopper and see a burger of the glorious perfection shown in any Burger King ad?) The print quality of advertising photographs is certainly not museum-worthy in most cases, either.

Using Danto’s method also requires that we engage in a form of analysis similar to both MIC and Walton’s methods.

Danto	Walton	MIC
External appearance of the object	Standard features	Static
Features that make the object unique	Variable features	Dynamic
Determination whether or not the object possesses the quality or feature of a given artistic predicate	Contra standard features	Evaluative
Comparison of this data to our prior knowledge and placement of the object in an artistic category	Categorization	Identity/Self

Seeking a Definition of Art

In Danto's analysis, as in Walton's, we start from a general concept—the relevant artistic predicates for a given type of artwork—and work towards the identification of a specific object as a work of art [theory to example]. The fractal/MIC model, however, begins with a specific seed idea and works toward a general concept [example to theory]. For instance, MIC might start with (to use Danto's favorite example), Andy Warhol's *Brillo Box*. After evaluating it at the static (painted plywood), dynamic (sitting in a museum), and evaluative (it's an excellent representation of a Brillo Box but despite its similarities to the real thing it is actually very different due to its placement in a museum) levels, the concept would be formed (an object such as Warhol's *Brillo Box* is a work of art because of the context into which it is placed).

Walton and Danto, on the other hand, would start from the theoretical level and work towards the specific object: the context into which an object is placed determines its status as art more than any intrinsic features of the work itself. The object in question (the *Brillo Box*) was placed in a museum and was intended to be seen as art. Therefore, the *Brillo Box* is a work of art. Granted, no matter which of these methods we are examining, there is a back-and-forth between example and theory, and the path of logical reasoning can be traced in both directions. Danto began by thinking about the *Brillo Box* (specific), formulated a theory about it (general), and then applied the theory to other objects to show that they are also works of art (specific). There are compelling reasons to use all three of these methods, depending on the situation and the object or type of objects under consideration.

In my studies, I begin from the standpoint that nearly any object can be a work of art. My definition is:

A work of art is a physical phenomenon (object or event) that is created for appreciation.

and/or

A work of art is a physical phenomenon (object or event) that is presented for appreciation.

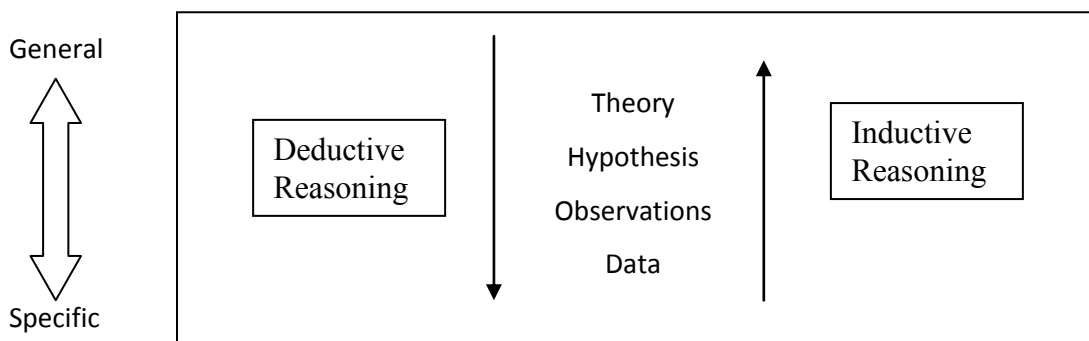
This is an unusually liberal definition of art, but contemporary artistic practice has shown that there are no intrinsic limits to what may be classified as works of art. Besides the *Brillo Box*, and of course the most notorious example of Duchamp's *Fountain*, the boundaries of art have been stretched by Earth art, performance art, installation art, digital technology, and perhaps thousands of different manifestations of human creativity. These specific examples are the roots of the tree known as "art". Each object can be traced along this root system back to the main trunk of the tree, to be shown as belonging to the greater conceptual whole. To invert the MIC analysis format, we must begin with identity/self and work back through the evaluative, dynamic, and static levels.

Level of Analysis	Specific Information
Identity/Self	Duchamp's <i>Fountain</i> is a work of art.
Evaluative	Duchamp's placement of a manufactured item in an art gallery and its presentation as a work of art transformed the ways in which people understand works of art.
Dynamic	The act of placing the fixture in a gallery and exhibiting it AS a work of art caused people to re-evaluate their ideas of what constitutes a work of art. Additionally, placing the fixture on its side created a new point of view from which to consider the object as being something other than its original manufactured purpose.
Static	It is a white porcelain bathroom fixture, placed on its side, with the name "R. Mutt" scrawled on it.

To understand a work such as *Fountain*, it is necessary to *begin* by identifying it as a work of art. The "lower" levels of MIC analysis yield little in the way of proof of the object's existence as art; however, if the process is inverted, each level can be understood in terms of the greater concept. The static level of *Fountain* does not offer much insight by itself, but when seen in light of a previous identification of the work as art, it can be understood according to the same terms as the static level of other, less controversial, works of art. To invert the MIC chart in this way can often lead to a more comprehensive understanding of a work of art.

Inductive and Deductive Reasoning

MIC/fractal analysis works according to *inductive reasoning*: beginning from the specific, it works upward to the identification of a theory. Inductive reasoning follows the pattern of observation (static), recognition of patterns in the observation (dynamic), generation of a tentative hypothesis (evaluative), and formulation of a theory (identity). Inverse fractal analysis reverses the process according to *deductive reasoning*. Beginning with a theory (identity), it follows through the generation of a hypothesis (evaluative), observations (dynamic), and confirmation as found in specific data (static).



Just as both inductive and deductive reasoning each have a place in the formation of knowledge, so also MIC/fractal analysis and inverse fractal analysis can also both be useful in the identification of works of art. Particularly in the evaluation of problematic objects presented as works of art, it may make more sense to begin with a theory: this object IS a work of art, and then to proceed to prove this theory by evaluating the dynamic and static aspects of the work. In other cases, it may be more logical to examine the specific static and dynamic components of the work and formulate a theory at the end of the process. For instance, a close examination of the artistic elements (static) and subject matter (dynamic) of a given Renaissance painting may lead to the identification of the artist who produced the work even if a signature is absent. The question, “Is this a work of art?” is best answered deductively. The question, “Who created this work of art?” would be well suited to inductive reasoning.

Positivism and Constructivism in MIC:

Family Resemblances and Historical Narration

A longstanding debate in epistemological circles concerns the philosophies of Positivism and Constructivism, a debate that is also played out in the identification of works of art. Positivism teaches that we can only fully understand that which we experience through direct sensory input—what we see, hear, touch, taste, or smell for ourselves. According to this point of view, knowledge is only found in what can be directly observed and measured. This is the driving force behind the empirical methods found in the physical sciences, which tend towards deductive reasoning and the scientific method: asking a question, conducting research to determine existing knowledge about the question, formation of a hypothesis, conducting an experiment in order to test the hypothesis, analysis of the experiment’s results, drawing conclusions in order to answer the original question (Trochim, 2006). (Watching any given episode of *Mythbusters* on the Discovery Channel offers excellent illustrations of the scientific method in action.) The visual art corollary of Positivism is found in the philosophies of such art theorists as Clive Bell (1914) who claimed that only the overt visual appearance of the work of art mattered, what Bell termed “significant form”. Likewise, in “The Intentional Fallacy” (1954), W.K. Wimsatt, Jr. and Monroe Beardsley stated that a work of art must be judged on what may be discovered in the work itself, without regard for the artist’s possible intentions about the work. In short, a Positivist philosophy of art could be summed up as “what you see is what you get”.

Constructivism, on the other hand, is the view that knowledge has a social basis—that human beings construct knowledge within a particular societal context. Thus, even the most seemingly “objective” scientific study is conducted by a unique human being with a specific set of preconceptions, biases, and cultural experiences which will inevitably color the ways in which the person understands the data that is ultimately

collected in the study (Trochim, 2006). While Positivism would maintain that Truth can be known through objective observation and measurement of data, Constructivism views Truth as being relative to an individual within a given society. Taking a larger view, Constructivism is the view that knowledge is, literally, *constructed*, whereas Positivism would suggest that it is *discovered* through empirical means. In art, Ludwig Wittgenstein proposed a theory of “family resemblances” to illuminate hard-to-define ideas such as “What is a game?” (Warburton, 2003, p. 70). Understanding these ideas involves a series of examples and explanations rather than an overall general definition. Just as in the case of games, there is no single quality or essence shared by all works of art; instead we can understand these terms by looking at how particular examples either are, or are not, works of art by examining the ways in which they resemble other items that are already known to be artworks. In the case of Warhol’s *Brillo Box* or Duchamp’s *Fountain* there is nothing inherent in the appearance of the object itself that qualifies it as a work of art; instead, these items are identified as works of art because of the particular social context in which they exist. This type of identification and analysis does not fit well with MIC, because of MIC’s reliance on what can be discovered through direct observation of the work of art at the static and dynamic levels. Sometimes, there really is not much to see—the truth about a work of art must be found in other ways.

Noel Carroll takes these ideas a step further in “Identifying Art” (1999), examining the ways in which controversial objects are identified as works of art by way of historical narratives—telling the story of a work of art that shows how it is a logical outgrowth of previous art-historical situations or practices, either a continuation of works that have preceded it or a reaction in opposition to them.

The narrative approach to classifying artworks establishes the art status of a candidate by connecting the work in question to previously acknowledged artworks and practices. In this regard, it may appear to recall the family resemblance approach. However, the narrative approach is not merely an affair of similarities between past and present art. The pertinent correspondences must be shown to be part of a narrative development. Such historical narratives track processes of cause and effect, decision and action, and lines of influence. (Carroll, 1999, p. 449).

The historical narrative approach is most like tracing the genealogy or heredity of a work of art—following the line of descent of a work from objects that are widely accepted as being works of art to the present item in question, demonstrating how and why it also deserves to be classified as “art”. This approach is compatible with Constructivist thinking, in that it grounds a work of art in a particular social and historical setting. *Brillo Box* and *Fountain* do not stand alone to be considered only on the merits of their outward appearance or significant form—it is an outgrowth of a longstanding twentieth-century conversation in the Artworld about the nature of art, with each object asking of itself “What makes art-works different from real things?” (Carroll, 1999, p. 448).

To perceive these works as art, it is essential to be familiar with the conversation about them, a factor that is not at all apparent in their outward appearance.

Unlike Bell, Wimsatt and Beardsley, Carroll's theory of historical narration could be used to show that the artist's intentions are a highly significant part of the historical narrative of an artwork. The artist's idea of just how the work should be positioned in the Artworld could be seen as another of these ongoing conversations, possibly tracing all the way back to Duchamp. Duchamp determined that ready-made objects could be seen as artworks—his intention that this was so, and his subsequent action in placing these objects in settings in which they demanded attention as works of art have had far-reaching consequences for generations of other artists and the products of their creative actions. *Fountain* opened the door to conceptual art and to conceptualization of artworks in general, because it was the concept, not the object, that was truly significant in that work.

The Inverse Fractal analysis of art also follows a similar line of thinking, tracing the connections between an individual work of art and those that have come before it, taking into account the specific social and historical context in which the work was produced including the artist's intentions and the concept of the work. Every specific contemporary work of art may be seen being located at the end of a root, traced back through a series of connections to other works that have come before, all of which lead upward to the trunk of a tree representing the idea "What is a work of visual art?". As new works of art are created, the roots of the tree go deeper. It could even be imagined that the branches, twigs, and leaves of the tree represent individual theories and philosophies about art, extending upward as infinitely as the specific works continue to grow downward into the Earth. It would be possible to start with a leaf—a particular philosophical position—and trace it downwards to a specific work of art at the end of a root. Some of those paths would be short and clear, others would be more convoluted, but all works of art and all theories about art exist within this intricate network of connections. Thus, all ideas about art bear a striking amount of interrelatedness, no matter how contradictory they may seem on the surface.

Conclusion

MIC/Fractal Analysis, its reversal in Inverse Fractal Analysis, and every other method of attempting to understand works of visual art each have validity and particular usages to which they may each be put—according to the metaphor of the tree, above, each of these theories would be a leaf. MIC is especially useful in determining the social theories embedded in works of visual art or in identifying specific information about a work of visual art (authorship, technique...), while inverse fractal analysis can be tremendously important in demonstrating the ways in which a controversial visual object exists as a work of art, tracing an object's line of descent through other works of art, showing how the controversial object is a continuation of an ongoing

conversation in the Artworld, either a direct descendant of previous works or a reaction in opposition to them. If we view artworks and art theories as all being roots and branches of the single tree known as Art, and if we can see the interconnected nature of these as being various aspects of a single, albeit highly complex, Idea, then the remarkably liberal definition of art proposed in this paper seems to be a nearly inescapable conclusion. Works of art have no inherent characteristics that imbue them with “artness.” Instead, they take part in a complicated genealogy, encompassing everything from the Lascaux cave paintings to the *Mona Lisa*, from Impressionism to Dada to Postmodernism. Painting, sculpture, ceramics, textiles, photographs, *Readymades*, found objects, conceptual art, performance art, installation art...the list is necessarily endless because new forms of artistic expression continue to emerge. There are no limits to human creativity, and there are therefore no limits or boundaries to Art. Likewise, there are no constraints on the theories related to the making of works of art, their interpretation, the various ways in which works of art may be identified or evaluated, and so on. The tree continues to grow in each direction, upwards and down into the Earth, with new theories about art and new works of art continuously emerging. Like a tree, no one root or leaf is more important or more significant than any other, and in this same way, no single work of art and no individual theory about art can stand alone. They are all interconnected.

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