

FLUID SYMMETRY

Logical to Artists, Mesmerizing to Viewers

Fré Ilgen

Dutch independent artist, theorist, scholar, publicist; Berlin, Germany

E-mail: fre.ilgen@gmail.com

Website: www.freilgen.com

Abstract: *Composition in a work of art describes the juxtaposition or balance of visual fixation points in a kind of symmetrical order, not in the sense of simple mirror-symmetry, but as a multi-layered process, a fluid symmetry. Comparing three artists across times, an argument will be made for the existence of a fluid symmetry of governing colours and forms. This positioning is logical to artists but may be mesmerizing to viewers. This essay will demonstrate how fundamental biological factors impact both the artist and the viewer, and also set the perimeters for cultural and rational interpretations.*

Keywords: composition, fluid symmetry, biological features of perception.

1 INTRODUCTION

An artwork does not exist autonomously, nor independently from visual perception. Multiple biological features involved in visual perception explain the experience of an artwork more than the merely restricted understanding through pictorial analysis. Biological features, mainly motions of the eyes but also the various functions of the brain and other parts of the body, are the initial triggers of the experience of art as a multi-layered, interactive process. To the eyes of the viewer, artworks biologically work the same, while each viewer interprets what he or she sees in an individual way.

Part of the artistic process is the artist's experience with handling materials according to his/her (un)conscious understanding of the biological features of perception. These include the eye motions triggered by the marks made in a material. My argument focuses

on specific works by three artists; I have selected these specific artworks to demonstrate how differences in time (as in epochs) and differences between abstraction and figuration are ultimately mere nuances.

2 THREE POSITIONS IN ART¹

The Italian painter *Jacopo Robusti Tintoretto* (1518-1594), lived in Venice in the late Renaissance and early Baroque period, a time in which a fresh curiosity for the accomplishments of Greek and Roman cultures fused with excitement and fear caused by the evolving trade with East Asia.² To offer experiences to help people psychologically to overcome the wave of the Black Death of his time, Tintoretto painted a large canvas formally titled “The Brazen Serpent” for the Scuola Grande di San Rocco, Venice.

Chiefly, the snake curling around a rod symbolizes Asclepius, the Greek God of Health, a symbol also known in Jewish and Arab cultures. The picture of Moses is set in the Middle East, while the whole vertical composition and perspective in such a meandering landscape dissolving into the clouds have a Chinese Taoist touch. The snakes are Asian dragons. Various figures are clearly Indian with bare upper-bodies wearing turbans. The subject is about hope and health, accessible to the viewer by merely looking at the work, emphasized by the accepted narrative of healing through merely looking at the rod and snake sculpture of Asclepius. The depiction of a snake curling around a rod as the symbol for health is inspired by the ancient myth of Hermes Trismegistus, popular in the Italian Renaissance and the later Northern European Reformation. Trismegistus was a fusion of the Greek god Hermes and the Egyptian god Thot, promoting the “Asclepius” concept of how one can control evil by capturing and containing its essence within a sculpture.

Born from parents who had immigrated in the early 20th century from Czechoslovakia, the American artist *Charles Biederman* (1906–2004), lived in Chicago in the nineteen twenties, in New York City in the *nineteen thirties*, and in Paris between 1937-1938, before settling in Red Wing, Minnesota. Biederman was fascinated by artistic creation as a transformation or restructuring of an objective visual understanding of nature, as opposed to photographic imaging after nature. He was convinced of human progress, and, appropriate to New York in the 1930s, he believed that future art would be made by using

¹ See *References* for literature recommendations for each of these artists.

² Before interacting with Islamic culture, European culture was impacted by Asian cultures since the Roman times. After the Ottomans conquered Istanbul in 1453 these contacts were halted, but reconnected and much extended in the 15th and 16th centuries, defining Tintoretto’s time. See the various books by Donald F. Lach.

machines.

Fusing Cézanne's painterly search for the structure of nature with influences from Fernand Léger at first, Mondrian a little later, and in combination with scientific knowledge (mainly optics and particle physics), Biederman developed his idiosyncratic, geometric and highly coloured reliefs. His magnum opus "Art as The Evolution of Visual Knowledge," 1948, the first book by an artist rewriting art history since the Stone Age, inspired various generations of artists in Europe and Canada. It is interesting that in his own art Biederman attempted to combine objective with subjective views, emphasizing how one has to *seriously look* at nature. Biederman's colours are entirely based on his personal observations in nature and not on any rationalized colour theories.

Now, concerning *myself in short*: I was born in the Netherlands in 1956, living in Berlin since 2007. I had my first exhibition in 1977 and formally have been a professional artist since completing my studies at Fine Art Academy in 1981. I have always been driven by questioning why humans need art. Complementing my broad reading about art history, art theory, various sciences, Western, Arab and various Asian philosophies, my own understanding of experiencing art started to make more sense when I came upon neuroscience.

I have always been interested in the notion of continuous change, in society, in one's own life and one's own body and mind, and so a long period working in abstraction followed my initial interest in figuration. My own understanding, augmented by neuroscience, led me back to figuration and returned me to my fascination for the Baroque. The fact that, and how, people from anywhere in the world continue to enjoy looking at the Old Masters, while not necessarily being knowledgeable about the narratives or symbolisms, is remarkable. It seems that the narratives these paintings show offer something familiar. Even when many viewers do not know the exact allegory, and even when the setting of the work is in a time entirely different from their own, the work in and of itself offers pleasant bewilderment. In comparison, similar scenes set in our own time do not work as well, because they come too close to the images offered by the news media. It is perceptibly clear how the motifs of Old Masters provide people in today's world more comfort, enjoyment and fascination than any depiction of our current real world. As in the case of classical music, a personal transformation of such Old Master motifs results

in a form accommodating today's world, Contemporary Classic.

3 FLUID SYMMETRY

When we discuss a composition within a work of art, we usually describe only the art historical view, which sometimes includes the ideas of the artist, but never the viewer's perspective.

The artist's biological aspects governing the mind-hand control in making the work and the viewer's biological components involved in the visual encounter with *the work, together understood as* a process of fluid symmetry, define, create and allow the experience of a given work. I propose *fluid symmetry as a notion that stands for the acting process of the artist at work and the active experience of the viewer*. To explain how this concept works I will describe some biological processes the artist and the viewer share. In this way, the reader can come to appreciate how fluid symmetry plays a key role in creating and enjoying a composition in art and makes this experience meaningful to the artist and viewer alike.³

3.1 Biological basics

The key factor for understanding perception is acknowledging the primary role of eye motions. The old concept of merely describing that the eye captures the light reflecting on the *artifact* limits the process exclusively to a static eye-position, which has historically led to promote linear central perspective. This is not how vision works: our eyes never freeze but roam constantly, also when viewing a composition of a work of art. Moreover, we never stand at one specific angle in front of a work or hold our heads completely still. In principle, our eyes first find some fixation points in a composition from where the gaze roams. It is evident that compositions with multiple fixation points, or with fixation points in variations of prominence will activate the eyes more than compositions with only one or none.⁴

There is a clear difference between how we actually look at and how we describe a work

³ While some features I describe in my book "ARTIST? The Hypothesis of Bodiness", I am currently working on a manuscript dealing with more well-known features of experiencing art, planned for publication 2021.

⁴ Eye motions are of primary importance, while in the subsequent processing in the brain multiple other biochemical aspects and motor actions impact our focus of attention. Explained, for instance, in my book "ARTIST? The Hypothesis of Bodiness", or Michael I. Posner, "Cognitive Neuroscience of Attention" (see references).

of art. In terms of biology, all human beings everywhere in the world physically respond in the same way to a specific work, whilst their validation and understanding of the work entirely depend on personal culture and knowledge.

Alignment, our basic natural preference for familiarity (for instance recognizing one's own kind), by instantly recognizing human-made marks in some material (footprint on a beach, brush stroke in paint, finger marks in clay or bronze), explains why figuration in art naturally attracts more general attention than abstraction. Abstraction can be favoured following our natural desire to understand structure and cohesion and is likely still an innate and evolutionary result of scanning for possible danger within our immediate environment. An interesting phenomenon in art through all ages and cultures is that in our perception artworks seem to work best when geometrical forms and organic shapes, including human figures, are combined.

3.2 Artistic execution leading the viewer's experience

3.2.1 Decision process

In principle, a canvas for painting is a symmetrical playing field for our eyes. When the canvas is blank it is in perfect symmetry. The moment an artist starts to apply paint, the symmetry is broken, and the game is on to restore some sense of equilibrium in a free kind of symmetry. When the painting is finished the multi-layered visual stimuli offer a sense of fluid symmetry. Why people prefer geometrically shaped canvases is not entirely known, except for the pragmatic aspects of storage and shipment, but one can also imagine possible explanations about the comforting relationship of squares and rectangles to architecture or linked to the innate desire for clear (geometrical) structure.

An interesting implication of the preference for a geometrical picture plane is, that its limitations evoke a natural and contained focus for the artist to revolve within the format of applying marks in the paint. This is not a random process. The artist continuously balances and counter-balances colours and shapes in context to various points that are fluidly ordered along various virtual **axes** crisscrossing the canvas.

The artist's choice of where to put colours and shapes has to do with a rational process of consciously discussing with oneself as it is a result from the process of applying the paint, often perceived by the artist as *just doing*. Therefore, the body is as much involved in the

decision process as the mind, and this is why I prefer to speak of the unity of mind/body. In the mature artist, as for the mature poet, writer, or musician, this frequently means relying on memorized experiences, both decisions of the mind/body and motor-experiences. The mature artist handles the brush spontaneously and directly. Therefore, artists often have stated “*the thinking is in my hands*”, a *sensing* of the correct decision of where to place a colour juxtaposed to another colour, that seems to happen unconsciously, as if the hands were deciding.⁵ The result seems entirely intuitive at first glance, and often surprises the artist, but becomes entirely logical to the involved artist in its evaluation.

The day after day of reworking of a painting is necessary for the sensibilization of the artist to find the inner logic of the work at hand. Though most artists do not describe it as such, this involves a certain search for a symmetry of visual forces, or fixation points. For instance, the artist virtually immersed in the painting intuitively balances a lemon-yellow touch on the left side of the virtual axis with a reddish spot on the right side, and a dark blue spot on the bottom just close to the centre line of the painting. This is a kind of intuited symmetry that indeed can be described as being fluid.

The artist virtually plays with and leads the vision of the viewer. In my own work, I follow such ‘logic’ of balancing three fixation points at a time, freely inspired by the old *three-body-problem* in physics, which exists in the more dynamic Baroque paintings. Throughout this process, I continue to add colours and forms in such triangular cohesion towards a degree of complexity, making such logical cohesion fascinating to a viewer, although when all is said and done, the logic will be virtually untraceable.

The viewer mostly will be unaware of the decision process of the artist, and quite likely will be unaware of the logic of the artist’s putting certain forms and colours at specific spots, but the eyes of the viewer will nevertheless be attracted by the stronger fixation points and subsequently roam to less strong fixation points. A right ordering of various degrees of fixation points causes the eyes of the viewer to roam at a comfortable speed in a fluid motion providing an idea of symmetry. When the fixation points are too haphazardly positioned, the artwork will be experienced as irritating to look at, or, in case of too few fixation points, as boring or plain.

⁵ “The thinking is in my hands” refers to the observation frequently **made** by artists since the 16th century, known in art history as the tradition of “*nelle mani*”, which I discuss in my book “ARTIST? The Hypothesis of Bodiness”, for instance, referring to the art historian Horst Bredekamp.

3.2.2 Tintoretto's brazen serpent

In Tintoretto's time, a hot topic was whether drawing (*disegno*) or painting (*colore*) was of prime importance.⁶ Following Cézanne's structure of *modulations*, Biederman preferred colour-entities, while I learned in my own studio how the old tradition of manually drawing on a canvas (without the technical support of a projector) before painting, enhances the artist's sense of the canvas' format. The involved mind-hand control interacts with the format of the canvas in order to produce an under-drawing, and this provides the artist with a first understanding of the whole composition; here he or she gets a notion of the complex cohesion or layered symmetry. It is an underestimated advantage that the process of physically executing such a drawing enhances the artist's feeling for the logic and cohesion in which a sense for an overall symmetry certainly plays a role. No digital technology can achieve this: motor-control impacts on the mind.

In Tintoretto's time, too, artists did not merely follow a certain narrative, decided by the person commissioning them, nor did artists only apply standardized ways of depicting certain persons. The production of visually convincing art was more important than precisely illustrating the chosen story. This point is illustrated by Leon Battista Alberti's famous statement:

"Nevertheless, in every historia, when variety is pleasing, that painting in which expressions and movements of the bodies are very different among themselves is principally agreeable to all. Then, let some [figures] be standing, visible in whole face, with hands upward and vibrant fingers, supported on one or two feet. Let others have an opposing face; and let the arms be visible hanging down and feet not connected, and to everyone their own reflections and actions. Let others be seated or rested on a bent knee or let them lie close by. And let some be nude, partly veiled, according to a mixed technique [conforming] to each of the two [ways]."⁷

⁶ Though beside the point for this essay, it might be revealing that much of this discussion was linked to the general commercial and cultural competition between Rome, Florence and Venice.

⁷ Alberti, Leon Battista (1404-1472), "On Painting – a new translation and critical edition", edited and translated by Rocco Sinisgalli, Cambridge University Press, 2011, pp. 60-61.



Figure 1: Jacopo Robusti Tintoretto, 1575-76, *Scuola Grande di San Rocco, Venice*, 840 x 520 cm.

Tintoretto's painting *The Brazen Serpent* is a perfect example of following this directive. While at first glance the painting has a symmetrical feel along a central vertical axis, one soon discovers this is not a case of simple symmetry. A key is how Alberti clearly describes that to such "Old Masters" the ordering of many figures, often in groups, in which upward-facing hands visually respond to arms hanging down, seated versus standing figures, was intended to build an interesting visual tension that in the depicted space can justifiably be defined as a form of fluid (3-D) symmetry, not much different

from how, for instance, Kandinsky, or Biederman worked at a much later juncture.

3.2.3 Biederman's coloured relief

Having had the privilege of being a friend of Charles Biederman and visiting his studio a couple of times in the late 1980s, I could often discuss with him his theories and work methods. Following initial rough sketches with colour pencils, Biederman used first to make by hand small coloured plywood models of his reliefs, a kind of marrying Cézanne's colour patches with Mondrian's strict geometry. Then he enlarged them in aluminum and into three dimensions as colour planes in various formats set on one larger monochrome colour plane. As an aside, in Biederman's own development also Picasso and Naum Gabo played a minor role,⁸ although, typical for this artist, he was more interested in Monet's handling of light than in Kandinsky's explorations of spirituality. There are subtle differences between his models and the realized reliefs, which are caused by revisions designed to improve the composition.

Although Biederman cut his basic geometrical planes with help of a machine and soon started to prefer aluminum, coloured by using a spray gun, his idiosyncratic reliefs were manually assembled and composed according to his own visual experiences and individual logic. Inspired by Monet's accomplishments, he much appreciated the colour-reflections caused by light hitting the three-dimensional reliefs *between and on* the various sized colour planes. Hardly any rectangular colour plane is fixed under a perfect angle. These tiny imperfections offer very small irregularities that make these reliefs so intriguing to experience because the micro-saccadic motions of our eyes respond to such imperfections causing us to repeatedly look.

After considerable time in Biederman's studio analyzing his works, I found he never used more than 5-7 different colours. Comparable to the logic Euclid understood, later furthered by Alberti and made popular in the modern age by Kandinsky, points and lines cause our eyes to focus and follow these, providing the mind with a sense of direction.

⁸ One has to see his inspirations in context of his life in the USA and his brief stay in Paris. At that time, for instance, there was no substantial information on the Russian, Hungarian or Polish Constructivists, nor on artists like Domela or Vantongerloo.

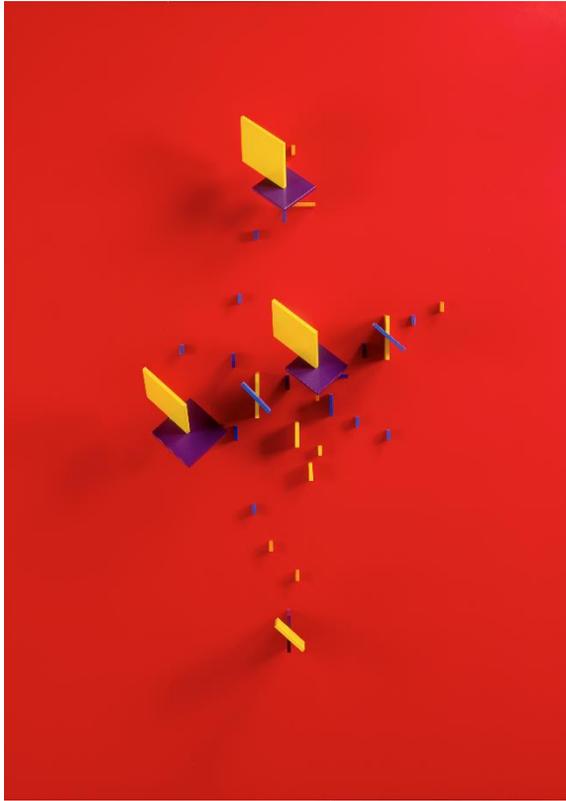


Figure 2: Charles J. Biederman, #4, *Diaz*⁹, designed 1986, fabricated 1990, painted aluminum, 41 3/8 x 29 7/8 x 5 in. Collection of the Frederick R. Weisman Art Museum at the University of Minnesota, Minneapolis. Biederman Archive, Weisman Art Museum, Gift of Charles J. Biederman. 2015.28.32.

By gradually reaching beyond a mere three-dimensional transformation of Mondrian's orthogonality, and by introducing coloured rectangles under oblique angles, Biederman invoked various layers of spatiality. *He thus allows* strong simulations of parts of ellipsoid motions pointing into all directions, including to the virtual back and front and beyond the picture-plane (inspired by his own understanding of basic motions in nature, astronomy and particle physics).

While his geometric reliefs suggest a simple symmetry, the careful positioning of few colours on both sides along subconsciously chosen *x*-positioned *axes*, the colour-

⁹ Image of Biederman's relief is the courtesy of Dr. Lyndel King and her staff of the Weisman Art Museum (WAM), Minneapolis, USA. I am especially grateful for this image as the work is from the years I personally knew and visited Charles and recall having seen this work.

reflections, his (conscious) choice of a variety of formats and the manually decided angles of each coloured rectangular add to the multi-layered complex symmetry. Biederman thus produces a fluid symmetry more structured in the context of a reduced form language but still analogous to the artistic process of how artists, like Tintoretto, decide on the placement of shape and colour.

3.2.4 *Fré Ilgen's Crawlin' King Snake*

Crawlin' King Snake is my own transformed interpretation of Tintoretto's *The Brazen Serpent*. I intuitively selected a motif from an Old Master. A natural transformation results from viewing something with *my* own eyes, allowing the brain and the rest of *my* body to process this and see what happens when *I* project this through *my* own arms and hands on a canvas. This process guarantees the outcome to be my very own. Such authentic, transformed artistic expressions are much more mesmerizing to a viewer than mere copies are.

With the transformative purpose in mind, I start with a small-sized photograph of the chosen motif. Then, through the traditional application of a square grid, I transfer the motif to my canvas. This not only allows for orientation by drawing the original motif larger on the canvas but also adds a sense of structure and basis for my own search for equilibrium or optical symmetry. Then I start the more specific colouring. I start, for instance, with one colour for a figure to the top left, next some figure halfway the right centre, then one at the bottom, left again. A next colour may bring me to the same first figure, but also *to other figures*.

This leads me to the use of very different colours, colour combinations and colour/form-emphasis, or fixation points, within the composition than Tintoretto used. I fuse the methods of classical *artists like Tintoretto* with Modernists like Biederman, and apply what I learn from neuroscience about perception and focus of attention. Painting a larger canvas such as *Crawlin' King Snake* involves (actually) climbing on a ladder for applying a little colour, descending, walking back and looking from some distance before any next move.

It is always exciting and interesting to see how some colour additions, maybe even a tiny brushstroke, can change the overall impression of the work, possibly pushing the work out of symmetrical balance or adding the exactly right visual tension or dynamic symmetry. I often like to check if in a new painting some structure becomes tangible. A

structure I understand as logical, because the choice of colours, forms and pictorial emphasis can only work well or, in other words, exemplify a dynamic equilibrium (Mondrian's definition) and evidence an interesting cohesion, when all colours are ordered in some kind of fluid symmetry.



Figure 3: Fré Ilgen, 2020, 300 x 200 cm.

4 CONCLUSIONS

Fluid symmetry is a notion that helps to explain the natural artistic process composing a painting. A process that certainly has some method but is idiosyncratic in each artist and is not a method in the sense of a precisely formulated and transferable procedure. A process leading to a visual result that will mesmerize any viewer, because the logic of such a symmetrical balancing of fixation points provides a strong simulation of continuous *change, of being alive* and is the same in both the artist and the viewer. Probably even more important is that such compositions allow the *viewer to appreciate the work visually*, by simply looking at *the work, without intellectually understanding* the meaning of the artwork as a precondition.

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