Just what do Artists and Scientists have in common anyway?

Cell Signaling Technologies December 5, 2023 Meg Black, PhD



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Le Corbusier with Albert Einstein in Princeton, New Jersey, 1946. Picture credit: courtesy Foundation Le Corbusier, Paris.

I had the pleasure of quite a long chat about the 'Modulor' with Professor Albert Einstein at Princeton.

At the time I was very unsure of myself, and anxious, explaining myself badly, explaining the idea badly, getting bogged down in "cause and effect."

Indeed, at one point in the meeting Einstein took a pencil and started doing a calculation.

Foolishly I interrupted him, the conversation changed its course, and the calculation went nowhere.

However, an impression had apparently been made.

That same evening Einstein kindly wrote to me of the 'Modulor,' 'It's a set of proportions that makes the bad difficult and the good easy Some see this assessment as lacking in scientific rigor. Personally, I find it extraordinarily clear-sighted. It's a gesture of friendship from a great scientist to those of us who are in no way scientists, but rather soldiers on the battlefield.

Le Corbusier believed that having the great man's name attached to his idea boosted its value.



A lead architect of the UN Building, Le Corbusier created a system of design based on the golden ratio (his modulor system).

Theories of Geometry + Proportion









Theories of Geometry + Proportion

Number + Sacred Roots



Golden Ratio + Archimedean Spiral

















Renaissance Theories + Classical Orders









Le Corbusier's Le Modular





What drives artists and scientists?

Le Corbusier with Albert Einstein, like most artists and scientists, thrive on creativity, passion, and initiative. We cannot see or clearly define these things we just know they are there.



How do we define a successful scientist?



How do we define a successful artist?

Theory of flow: Often associated with scientists, athletes, and artists.

Mihalyi Csikszentmihalyi "The best moments in our lives are not the passive, receptive, relaxing times . . . The best moments usually occur if a person's body or mind is stretched to its limits in a voluntary effort to accomplish something difficult and worthwhile"

(Csikszentmihalyi, 1990).



What does it take to be a successful scientist?

- Scientists must be accurate, and even so there are the skeptics.
- Research, scientific proof, hypothesis, objectivity guide scientific research.
- Theories are tested, proven or discarded, challenged.



Differences:

- Scientists discover things that already exist, gravity, heliocentric universe.
- Artists create something that does not previously exist. The discovery is more personal, less of a universal impact. If I'm wrong, you're still safe!
- Sometimes history informs art, for example a painting of Washington crossing the Delaware.
- Other times art informs history, Picasso's Guernica the make us aware of the horrors of war.
- History is interpretive, not an exact science. Science needs to be precise, objective.



Emanuel Leutze (Loit-sah), *Washington Crossing The Delaware*, 1851. Oil on canvas, 149 x 255 in. Metropolitan Museum of Art, New York.



Pablo Picasso GUERNIC, 1937. Oil on canvas, 11'6" \times 25'8" (3.5 \times 7.8 m). Museo Nacional Centro de Arte Reina Sofía, Madrid.

How do artists conduct research?

- *Beauty is in the eye of the beholder* is vague, unsatisfactory. This definition would drive scientists nuts.
- Why can't we, as artists, define what it is we are trying to create?





Duke University cognitive research and the science of beauty

Scientific research tells us a lot about how art effects our well-being.

Duke researchers have determined the eye can scan an image the fastest when it is in the proportions of the golden rectangle (Hosey, 2009). The golden rectangle is omnipresent in nature. Text-Books, iPhone, and most computer screens use this proportion.



Fractals are distinct from the simple figures of classical, or Euclidean, geometry—the square, the circle, the sphere, and so forth.







Fractal shapes are found in river deltas, human lungs, lightening bolts, Fractals remind us of trees, especially the Acacia, the tree from the African Savanah.

Humanities history. Its in our genetic history. Golf courses are designed after the Savanah.





Duke research studies show stress can be reduced by 60% by being exposed to Jackson Pollock paintings (Hosey, 2009).



Dad showing his children Pollock's *Number 1, 1950 (Lavender Mist)*, National Gallery of Art, Washington.



Jackson Pollock AUTUMN RHYTHM (NUMBER 30) 1950. Oil on canvas, $8'9'' \times 17'3''$ (2.66 × 5.25 m). Metropolitan Museum of Art, New York.

How do I, as an artist conduct research?

I study history, the marks made by artists who have come before me.



Meg Black, *Rocks and Water as Metaphor for Life's Journey* (2017). 40 x 40 x 4 inches. Mixed media painting.





https://megblack.com/rocks-and-water-art-historical-inspirations/

Meg Black (2020). Resilience, 40 x 40 x 4 inches. Mixed media. Private collection.











https://megblack.com/rocks-and-water-painting-choosing-the-composition/

I study nature and weather



Katsushika Hokusai, *The Great Wave at Kanagawa (from a Series of Thirty-Six Views of Mount Fuji)*, ca. 1831–33. Polychrome ink and color on paper, 10 1/8 x 14 15/16 in. Métropolitain Museum of Art, New York.





Winslow Homer (1894). *High Cliff, Coast of Maine*. Oil on Canvas, 30 x 38 inches. Smithsonian Museum, Washington, DC. Meg Black, *Northshore Scape* (2019), pulp painting, 19 x 19 x 3 inches. CST exhibition.







- The colors of a winter's day in New England.
- The eternal struggle of survival against the harsh New England landscape is the subject of these simple compositions.
- The close observation of water as it cascades over ancient rocks.



I write about my efforts, I'm a philosopher after all.

Meg Black: Artist statement

I am drawn to the north Atlantic shoreline with its harsh terrain, ice cold water, and thunderous crashing waves. Here, rocks are thrown to the shore by an unrelenting tide. This for me is the metaphor for life: we long for smoothness of the water but we are shaped by the steeliness of the rocks. Using an array of textures and colors, I attempt to depict this emotional pull of the sea, and to tell my story using my palette much like a poet uses words.



I mimic the shapes I find in nature





Meg Black (2020). *Cape Ann Shoreline*, 40 x 40 x 4 inches. Mixed media. U.S. Embassy, Belgrade.







And I practice the art of observation. *Coneflowers* and Virginia Woolf

I had finished reading Virginia Woolf's short story "Kew Gardens," narrated by a snail who spends his days eavesdropping on passersby while also observing the intricacy of forms and colors playing off the petals and leaves in his domain. It was this story that prompted me to bring my bike to an abrupt halt beside a thicket of coneflowers by the road. Like the snail, I got down on my knees and crawled into the flowers where I discovered a world much deeper than the usual observations of a detached onlooker. I gained a whole new perspective and forged an intimacy with nature beyond anything I experienced in previous artistic encounters. Paraphrased from Tovah Martin, editor, Flower Magazine, September 2022.







Living with art:





- Living with art brings us joy, helps us connect to our humanity.
- Helps us develop our observational skills. We look to learn and learn to look. Amy Herman teaches detectives in NYC how to solve crimes by looking at art.
- Because of its feel-good effects, art is a powerful tool for selfcare and mental health. Studies have shown that expression through art can help people with depression, anxiety, and stress. Art has also been linked to improved memory, reasoning, and resilience in aging adults.
- Looking at art offsets the impact of Alzheimer's Disease.

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