

Art & Physics IV



Dr Clare Z

“What underlay Cubist space and futurist time was the concept of simultaneity”

“At lightspeed in spacetime everything is simultaneous.”

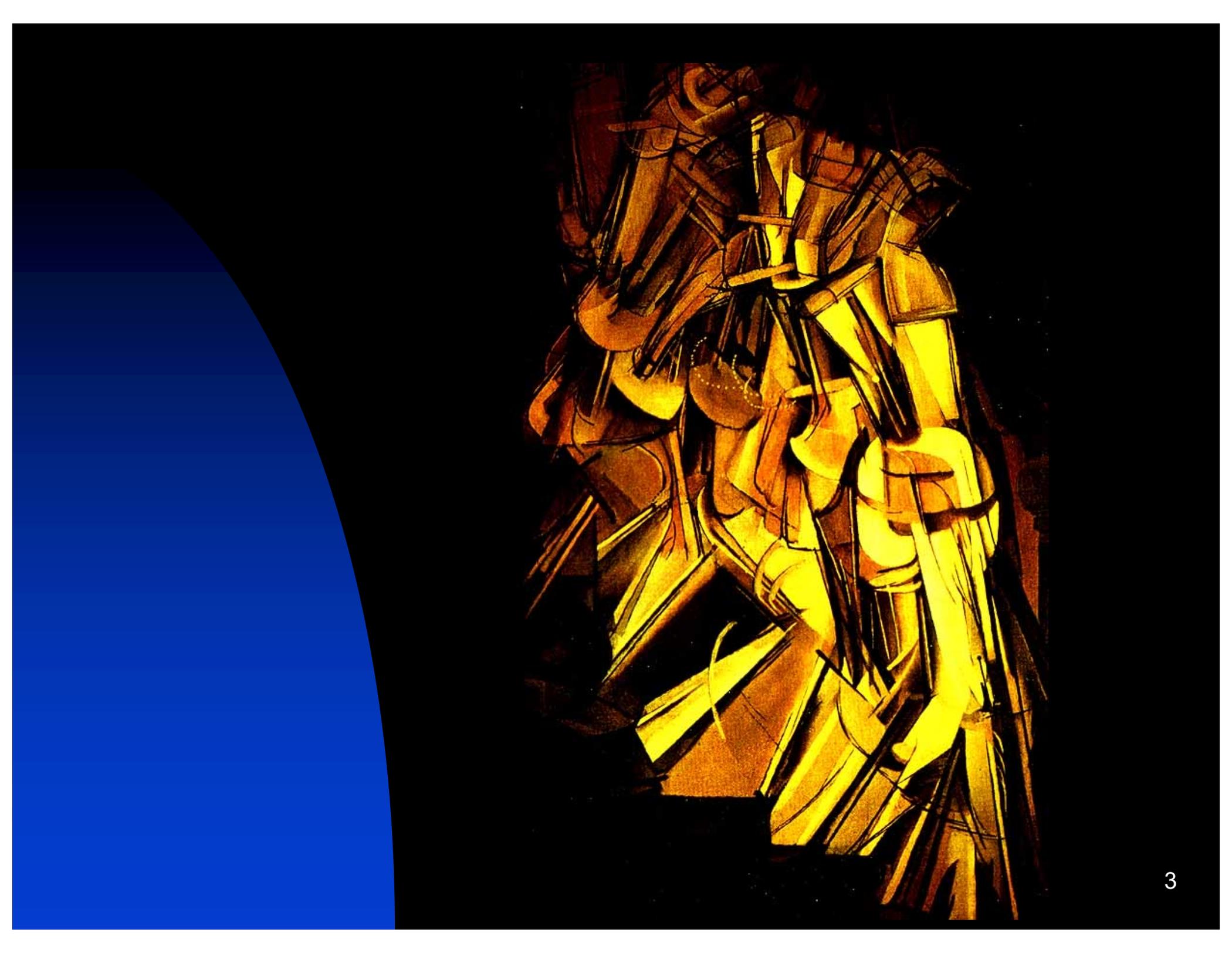
Shlain

The first glimpse Americans had of the new European art was at the 1913 Armory show in New York where *Nude Descending a Staircase, No. 2* was seen for the first time.

“Behind the dizzying chaotic motion on Duchamp’s canvas, however, lay the idea of stillness, contained within the concept of the simultaneity of time at c .”

Shlain





“The same people who turned away from trying to understand Einstein’s special theory of relativity because of its complexity, or from deciphering Picasso’s baffling Cubist compositions, readily acknowledged the aberrations of time and space they experienced while they dreamed. Dream time does not obey the linear commandments of train time, nor does dream space conform to Euclidean axioms.” Shlain

Surrealism whose spokesperson was the poet Andre Breton, “ ‘is based on the belief . . . in the omnipotence of dreams, in the undirected play of thought.’ ”

Shlain

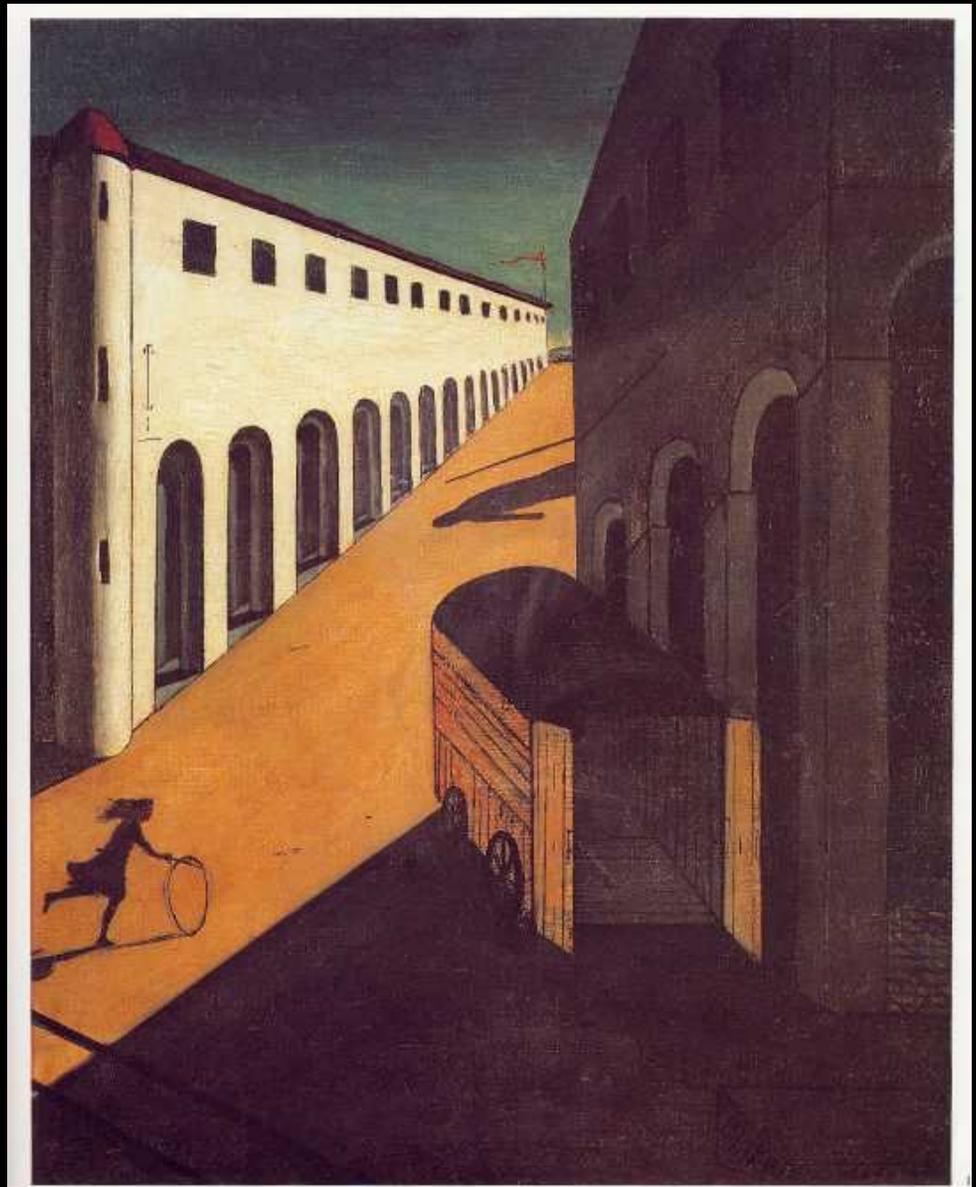
Freud wrote *The Interpretation of Dreams* in 1900.



De Chirico's distorted space violated perspective by "*exaggerating* the depth of his canvases, making them appear even deeper than they were."

"In addition to distorting space, De Chirico upset the usual conventions of time by inserting into his dreamscapes enigmatic figures who cast shadows of paradoxical lengths beneath skies of unsettling hues." Shlain



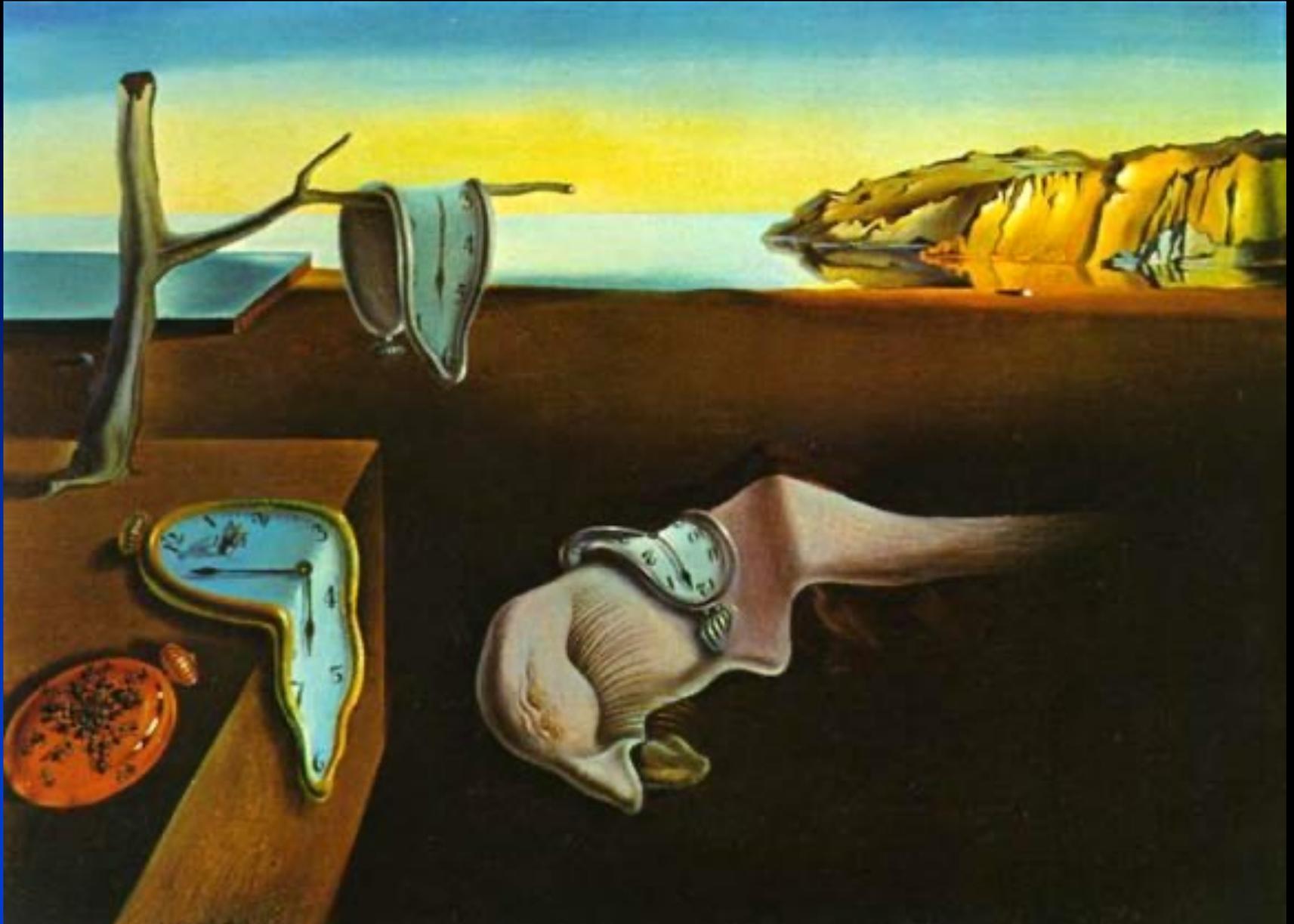


Melancholy and Mystery of a Street (1914)

In *Nostalgia of the Infinite* (1914), we are led to question our intuition about time.

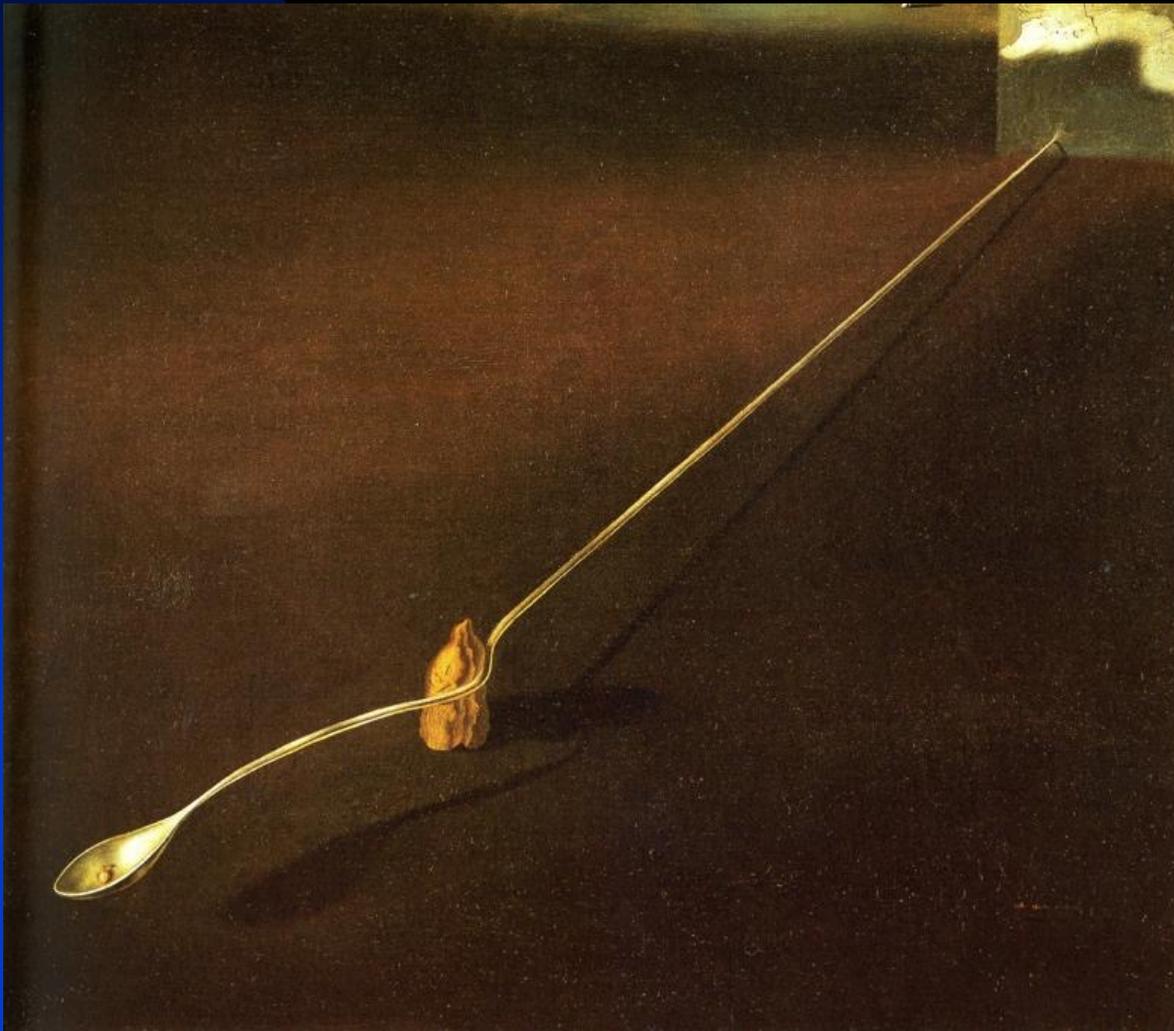
There is no absolute time.

Dali's *The Persistence of Memory* symbolizes the "dilation of relativistic time in one visual metaphor." Shlain



“A shadow has no thickness. Given that there exists a fourth dimension, the question must be asked: If shadows are two-dimensional projections of three-dimensional objects, could we and the objects in our world be three-dimensional shadows of beings and things that exist in a fourth dimension? If we

consider the shadow’s pale insubstantiality compared to its full three-dimensional source and contemplate how the next higher dimension would appear in relation to our anemic shade of it, the thought must give us pause.” Shlain



“Despite Magritte’s avowed disinterest in the new physics, this reclusive painter’s oeuvre gives form to many of these concepts helping his viewers to understand physics better than discursive explanations.” Shlain





Rene Magritte's *Time Transfixed*

"My painting is visible images which conceal nothing; they evoke mystery and, indeed, when one sees one of my pictures, one asks oneself this simple question 'What does that mean'? It does not mean anything, because mystery means nothing either, it is unknowable." Magritte

The Treachery of Images
(La trahison des images) (1928, 1929)



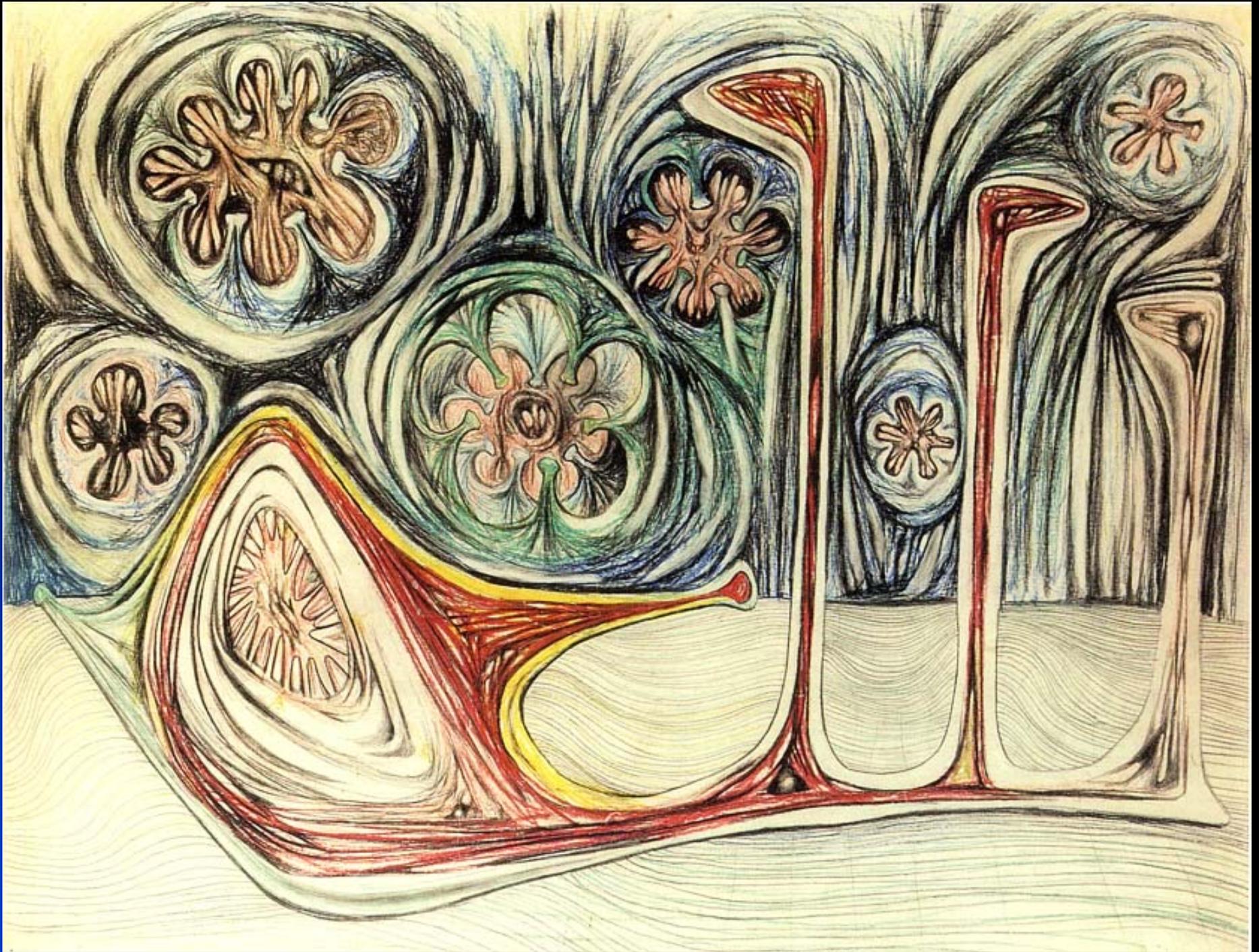


The Son of Man, Magritte

Matta left his native Chile for Paris in 1933, working in the studio of architect Le Corbusier for two years. He was introduced to the surrealist artists in Paris and by 1937 began to produce imaginative crayon drawings of other-worldly volcanic landscapes. Gordon Onslow-Ford encouraged him to try his first oil paintings, titled "Psychological Morphologies", which he considered "landscapes of the mind".

<http://www.matta-art.com/>

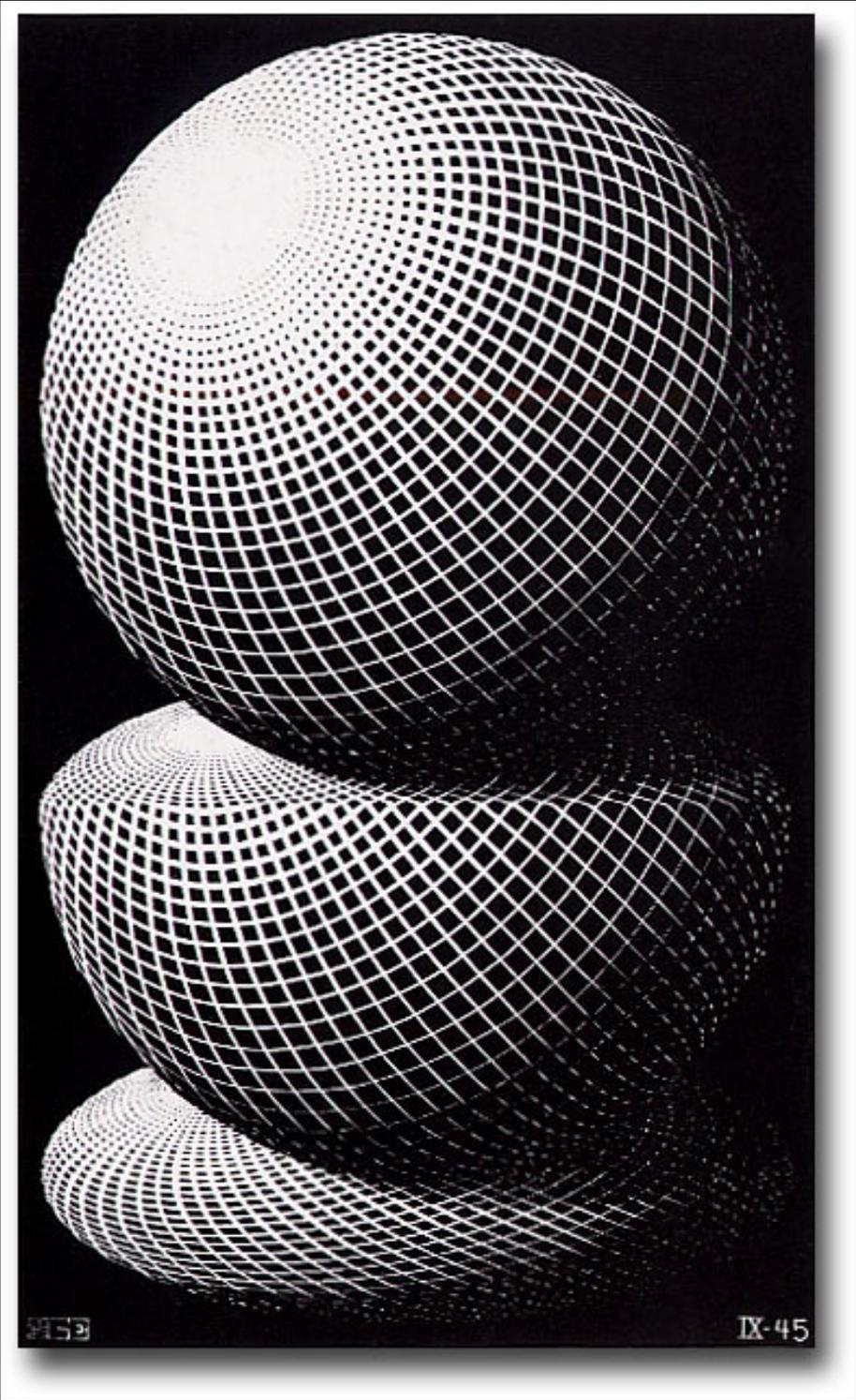
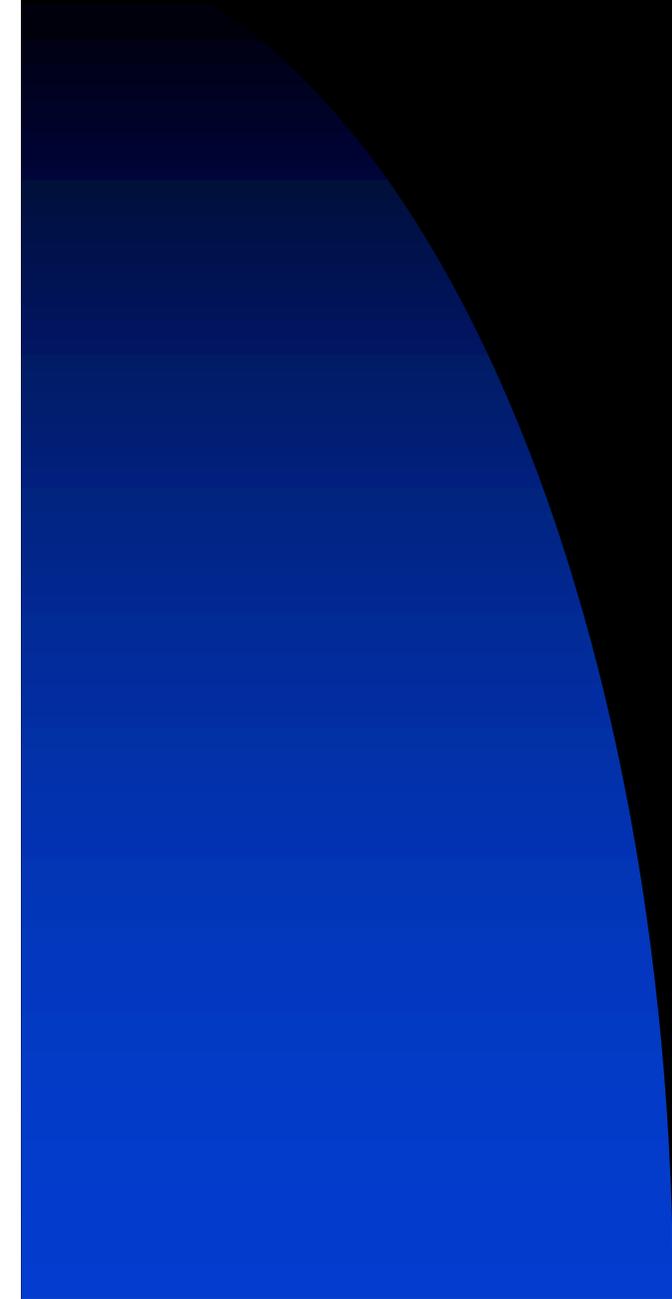






“The Dutch artist M. C. Escher also was not a member of the surrealists, yet his precise pen and ink prints incorporate clever optical sleights of hand consonant with the ideals of the movement.”

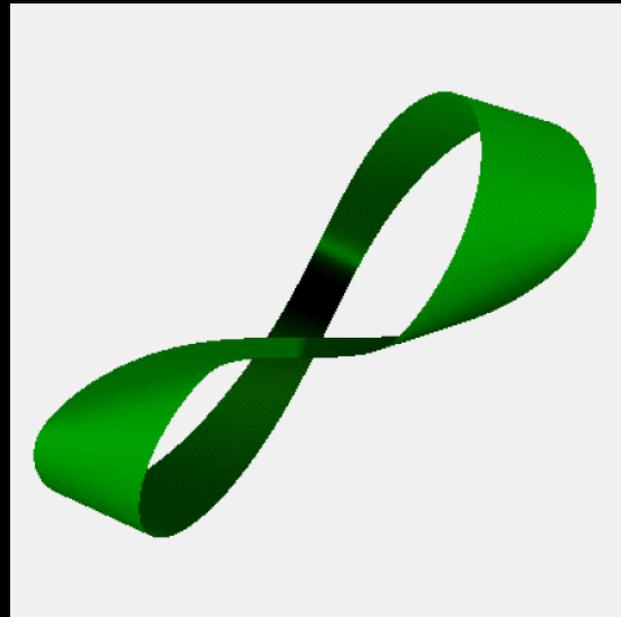
Shlain

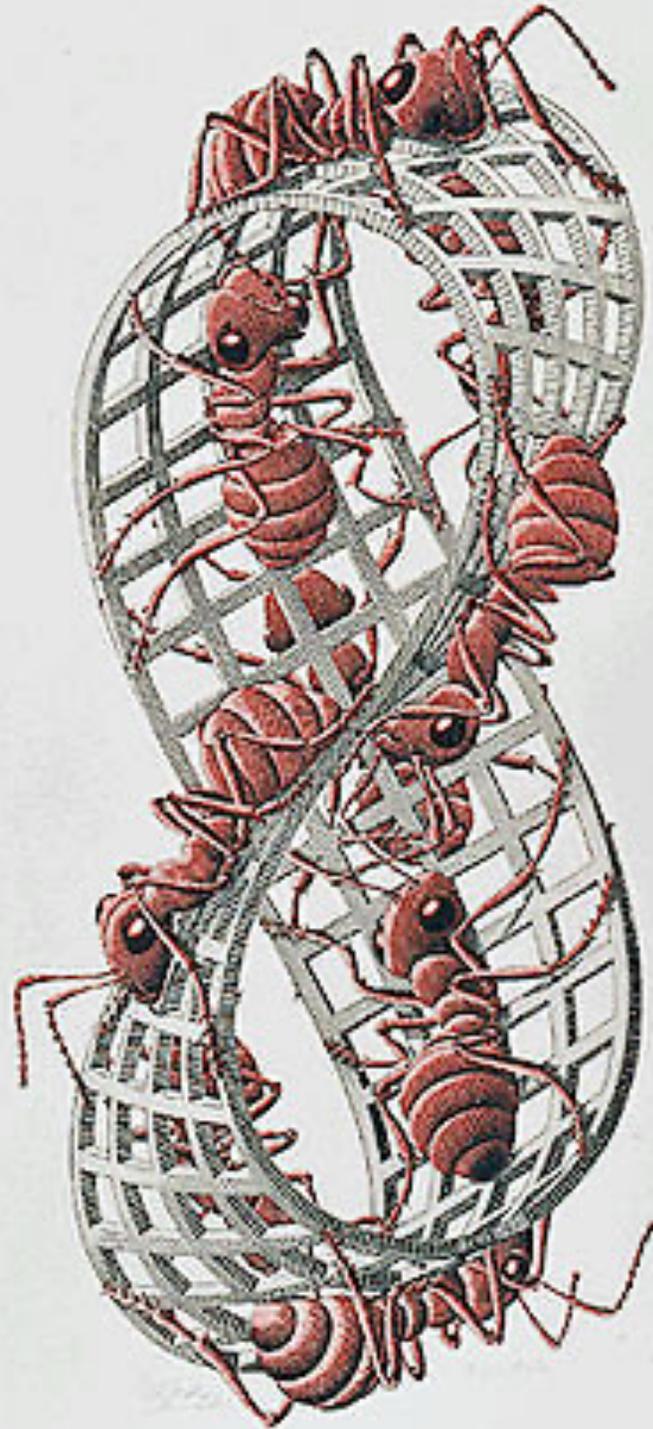


“Escher also addresses the recursiveness of time and space in many of his prints. . . . For example, one of Escher’s favorite symbols is the Mobius strip. On this puzzling geometrical ribbon with two seemingly distinct sides and neither a beginning nor an end, . . . it does not matter where one starts to travel because one will have to return to that place by the end of one’s journey. Although Minkowski’s spacetime is not shaped like a Mobius strip, the latter’s surface can serve as a helpful aid for visualizing the unity of space and time. If at any point along this continuous strip you imagine one side of the Mobius strip to be space and the other side time, you can have a sense of the way relativity unites what in our three-dimensional world are two separate faces of reality.”

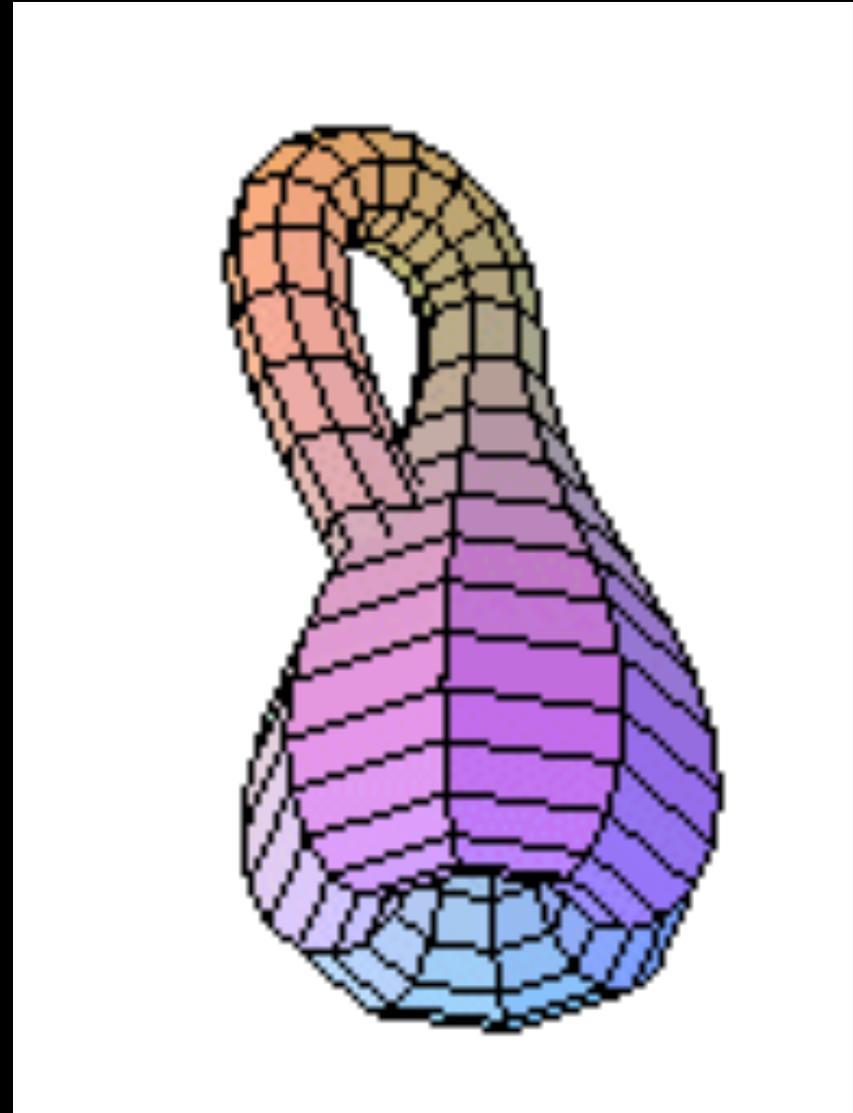
Shlain

The Mobius strip helps to imagine the spacetime continuum, yet nowhere does Escher mention any interest in modern physics nor their founders.





“Einstein’s special theory of relativity and Bohr’s theory of complementarity both propose ways in which opposites can be annealed into a seamless alloy with no beginning and no end but just an endless loop.” Shlain

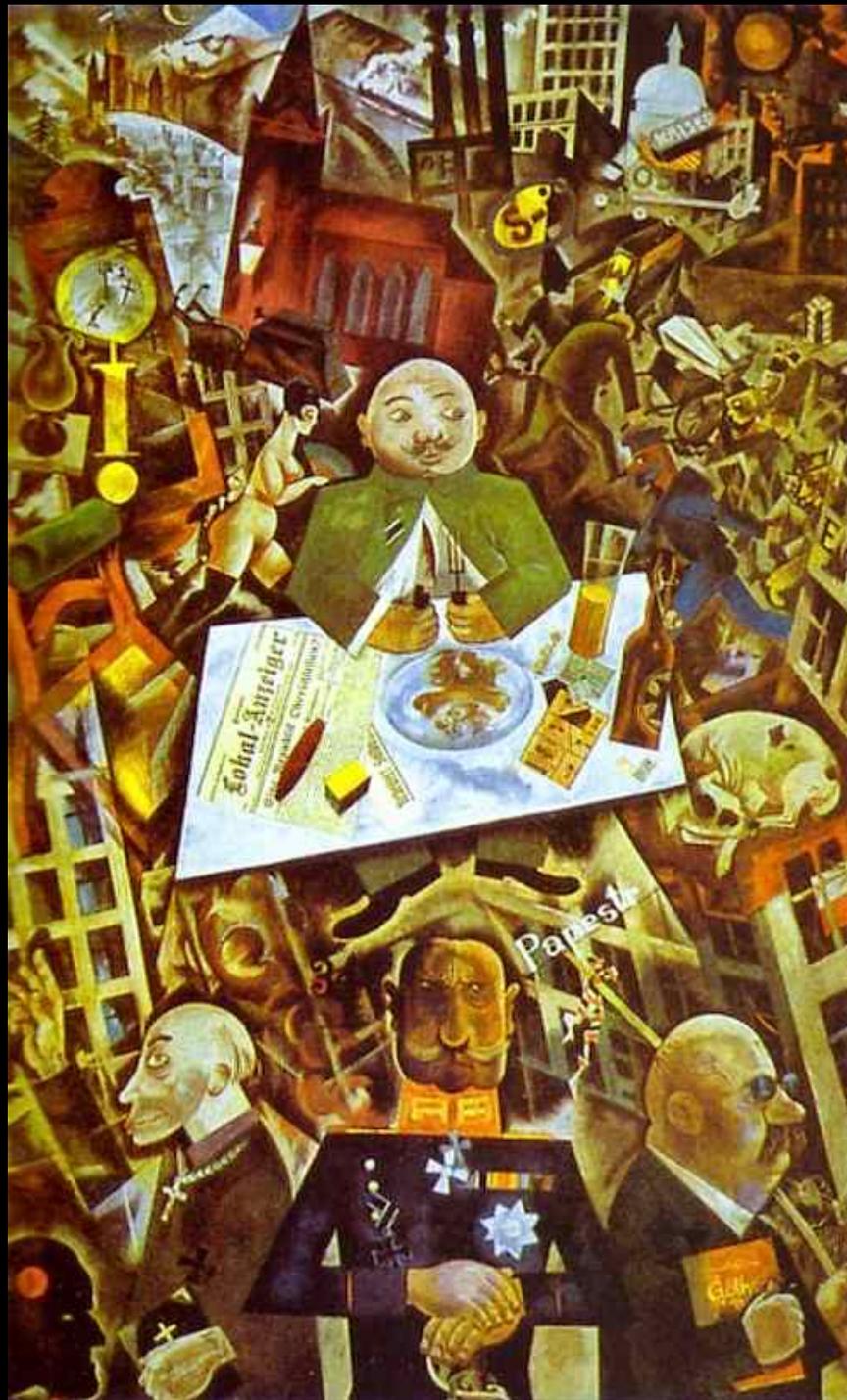


“After 1930, art became pervaded by morbid images that seem in retrospect to have been predicated on some awful artistic premonition.

As the terrible events that were destined to close out the first half of the twentieth century began to pile up on the horizon like ominous thunderclouds, artists, like sensitive weather vanes, turned away from the task of creating new forms and symbols and began instead to point toward the impending maelstrom.” Shlain

“Max Beckman, Salvador Dali, and George Grosz, among others, forewarned of the coming events in a series of troubling canvases; but like Cassandra’s words, their painted prophecies were ignored by a populace preoccupied with a global economic depression.” Shlain





George Grosz

“Picasso responded to the Nazi bombing of a civilian target in the Spanish civil war with what was to become the master image of brutality, terror, and impotent rage in his *Guernica* (1937). Shlain



“This and other paintings were like posters for some supremely gruesome horror film, foretelling the cataclysm that would soon engulf the entire civilized world.” Shlain

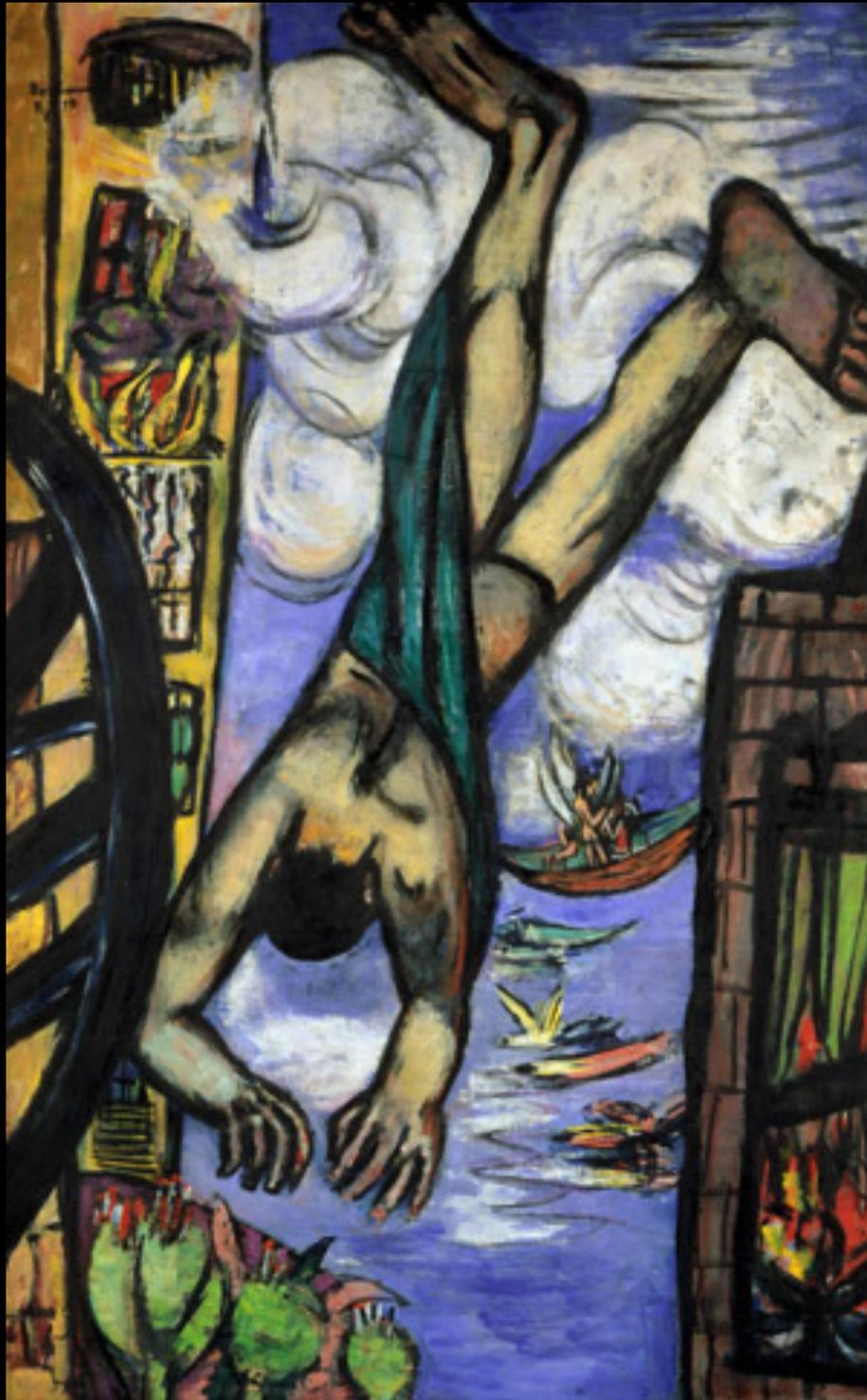


“My aim is always to get hold of the magic of reality and to transfer this reality into painting -- to make the invisible visible through reality.

It may sound paradoxical, but it is, in fact, reality which forms the mystery of our existence.

What helps me most in this task is the penetration of space. Height, width, and depth are the three phenomena which I must transfer into one plane to form the abstract surface of the picture, and thus to protect myself from the infinity of space.”

Beckman



“Quantum physicists discovered that ‘things’ constructed out of matter originated in fluctuations of insubstantial fields of energy. Since the field was made of nothing and was invisible, it had to remain a mental abstraction. Painters, too, began to explore the idea of art without an image. Though the great movement of abstract art began in 1910



with Kandinsky, it culminated in 1945 with Abstract Expressionism in New York. This tight-knit group of artists went further than previous abstract painters to create new images that spoke directly to the issues Einstein considered concerning our perceptions of space, time, and light.” Shlain

“Jackson Pollock was the most revolutionary of these abstract painters.”

“Like Monet, he wanted to seize the moment of *now*. This was also the same *now* that Einstein had shown dilated like an inflating hot air balloon at the approach of c , blotting out the past and the future. Monet, the first relativistic painter, transfixed *now*, as did Einstein, the first relativistic physicist.”

“By flinging, swaying, splashing, and dripping paint that flew from his frenzied body, he reenacted Shiva’s dance of creation. What emerged was a sand painting in oil and enamel that was not a picture of a ‘thing’ but rather a record of the psychographic energy-charged movements Pollock had made in the moment of *now*.” Shlain



Jackson Pollock Convergence Albright-Knox Art Gallery

“Objects in space conform to Euclidian vectors and dimensions. These words do not have the same meaning when we speak about the characteristics of a field. In Pollack’s most famous paintings there are no things, merely the expression of energy and tension.

Typically, in his work there are no vectors of direction. His paintings are not changed very much if they are hung upside down. They have no center or hierarchy of interest but instead give all areas of the picture equal importance. Pollock’s canvases are uniformly filled from border to border, just as a field does not occupy a particular location but is ubiquitously spread out in space. His works approximate the principle of the field as conceived in physics.”

Shlain

“By standing back and flinging paint instead of applying it, Pollock disconnected the artist from the canvas for the first time in Western art. For a brief moment as it traveled through *space*, paint arced in a fluid stream in *time*. In that crack



JACKSON POLLOCK
SCOTTISH NATIONAL GALLERY OF MODERN ART

between cause and effect, a brief moment occurred that was out of control. Like the gap in a spark plug, this moment is what Aristotle once proposed was the *potentia*.”

Shlain

“According to quantum field theory, fields alone are real. *They* are the substance of the universe and not ‘matter.’ Matter (particles) is simply the momentary manifestations of interacting fields which, intangible and insubstantial as they are, are the only real things in the universe. Their interactions seem particle-like because fields interact abruptly and in minute regions of space.”

Zukav



Barnett Newman (1905–70)
questioned the purpose of art—
it's mission.

The names he chose for his
paintings were as important
as the works themselves;
Day One, Onement, Creation.

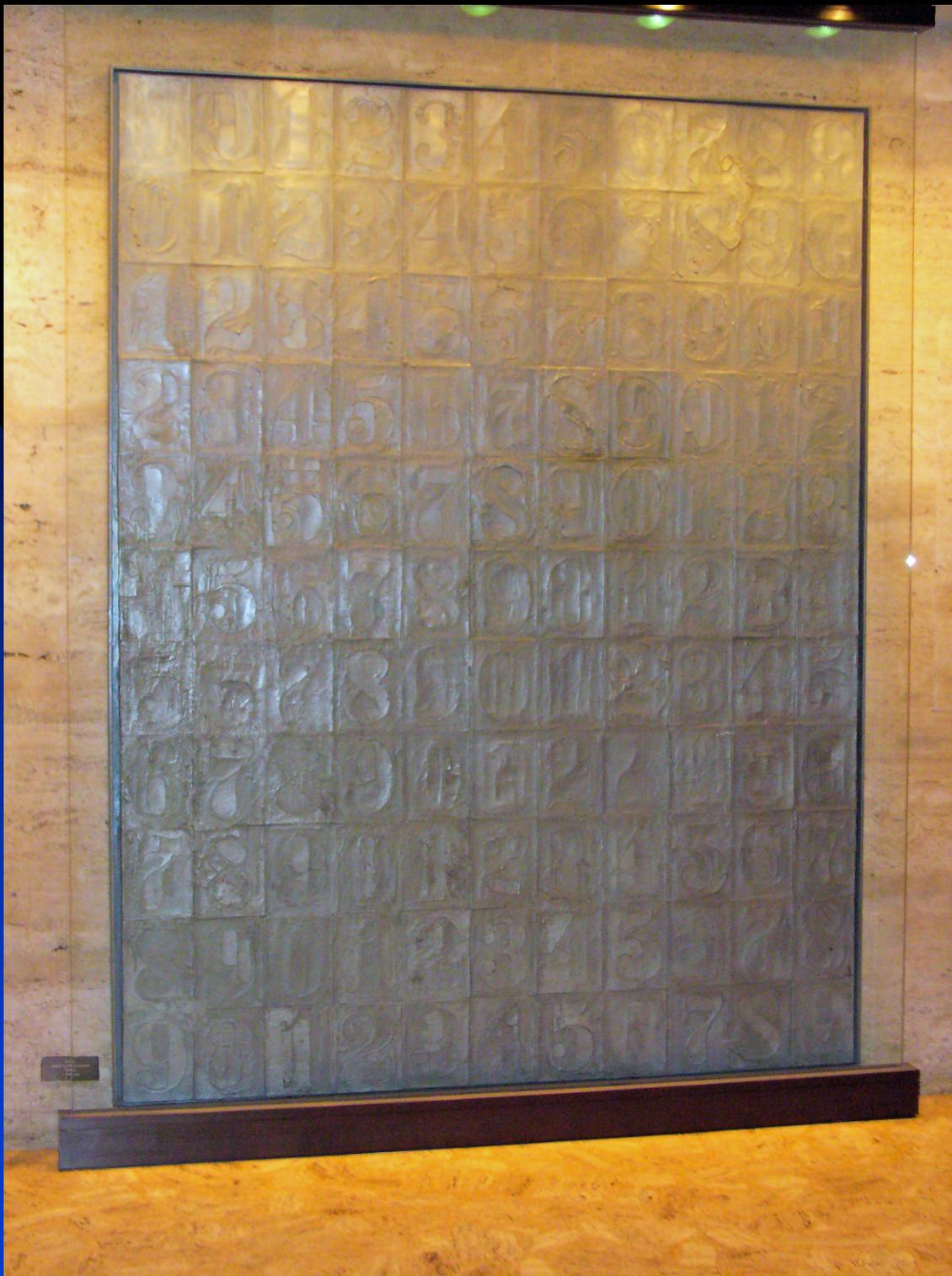
Who's Afraid of Red, Yellow and Blue?, 1966.
Typical of Newman's later work, with the use of pure and vibrant color.



“Newman covered huge surfaces with a single homogenous color that was uniform in texture. . . . His paintings could not be seen or analyzed in terms of their component parts. Their holistic quality, like that of Pollack’s paintings, evokes the idea of a field.”

Shlain





Numbers

Jasper Johns

