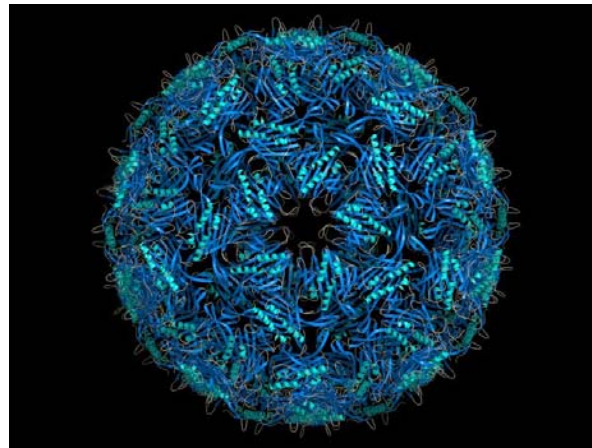


The Tango of Art & Science

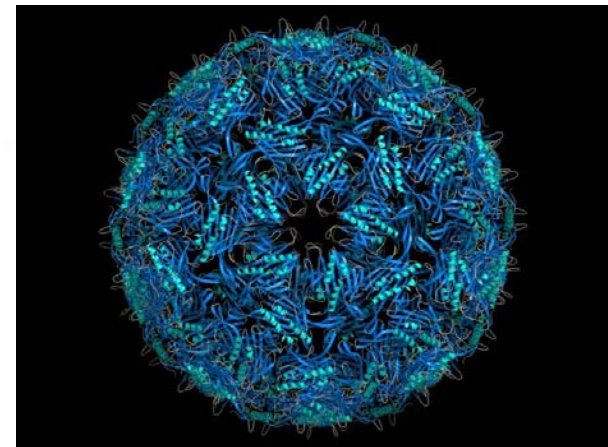
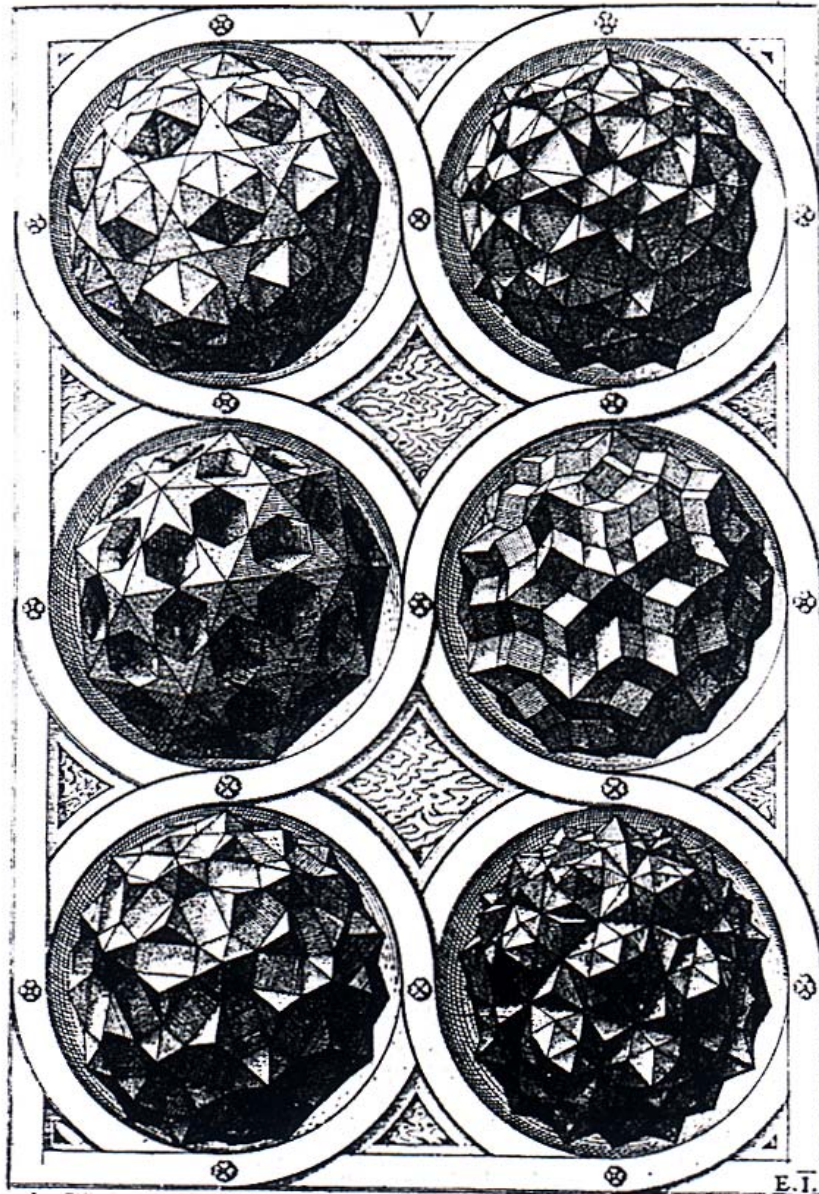
Structure, Movement & Thought



The New ark Museum

February 19, 2002

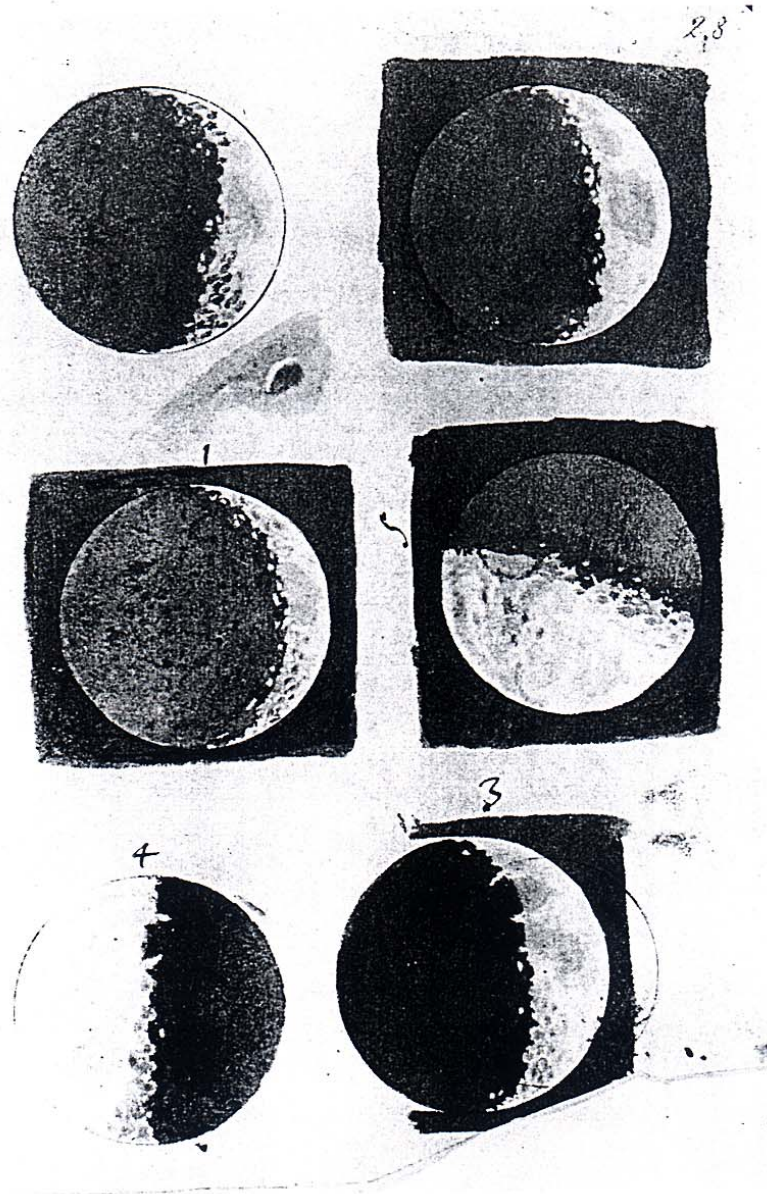
The Heritage of Giotto's Geometry



Virus particle, 2002

7.7. A page from Wenzel Jamnitzer's *Perspectiva corporum regularium* (1569). By permission of the Houghton Library, Harvard University.

Geometrization of Astronomical Space



7.12. Galileo, wash drawings of the moon (1609). Ms. Gal. 48, fol. 28r. Courtesy of the Biblioteca Nazionale Centrale, Florence.

HUMAN FRONTIER



Prion diseases

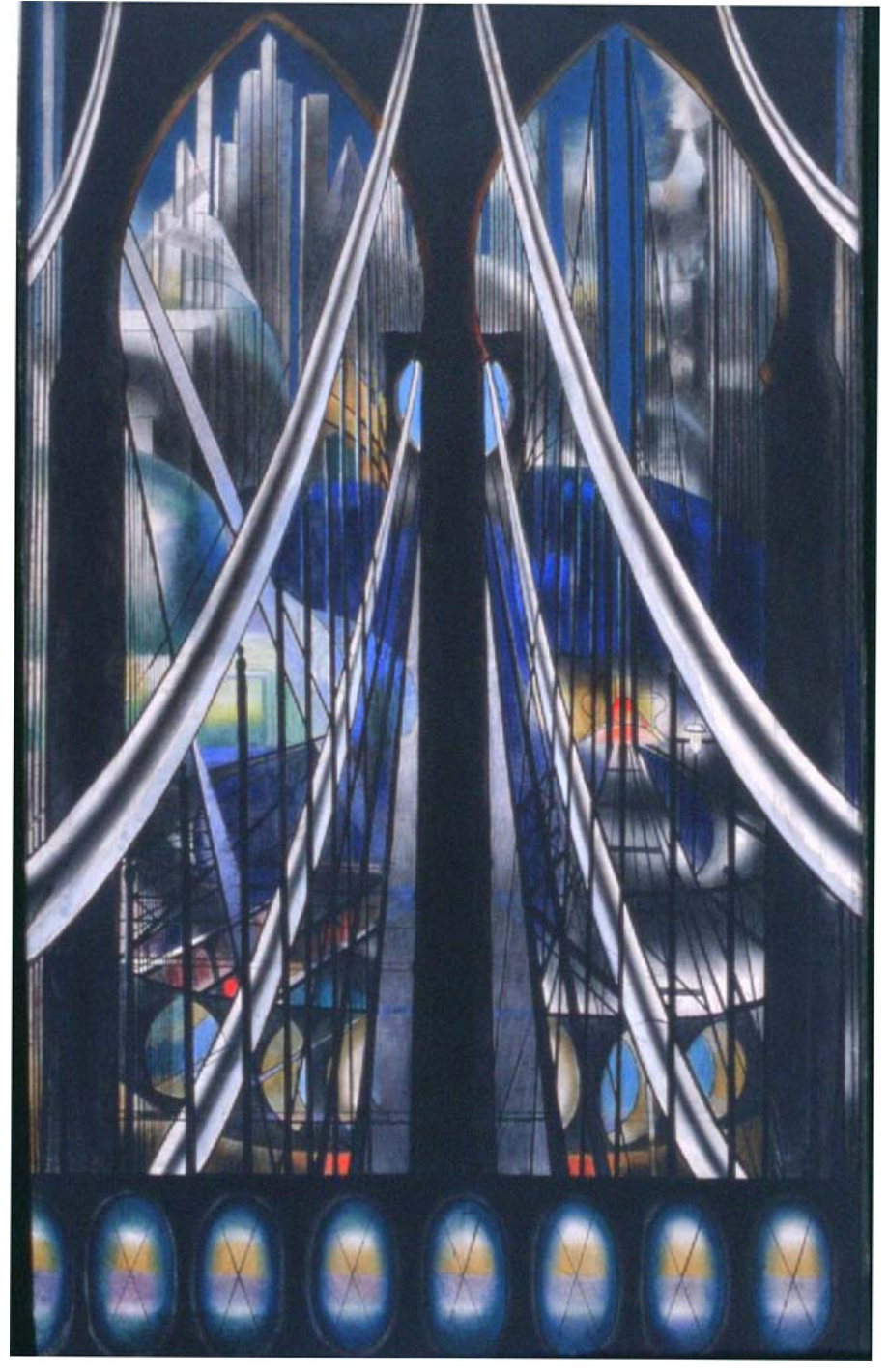
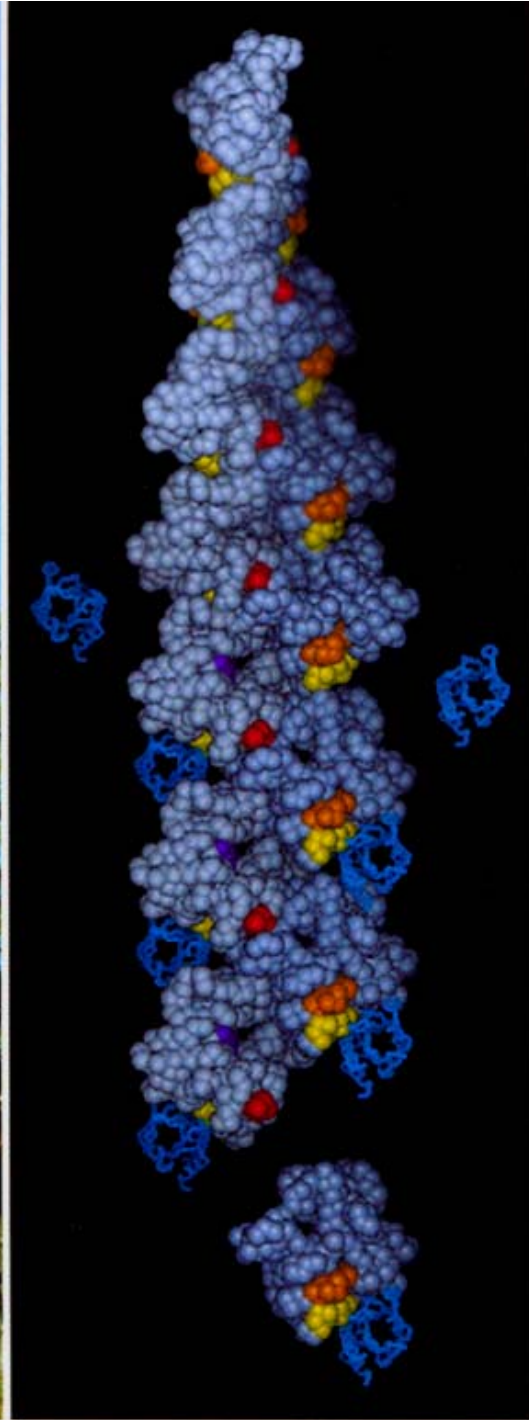
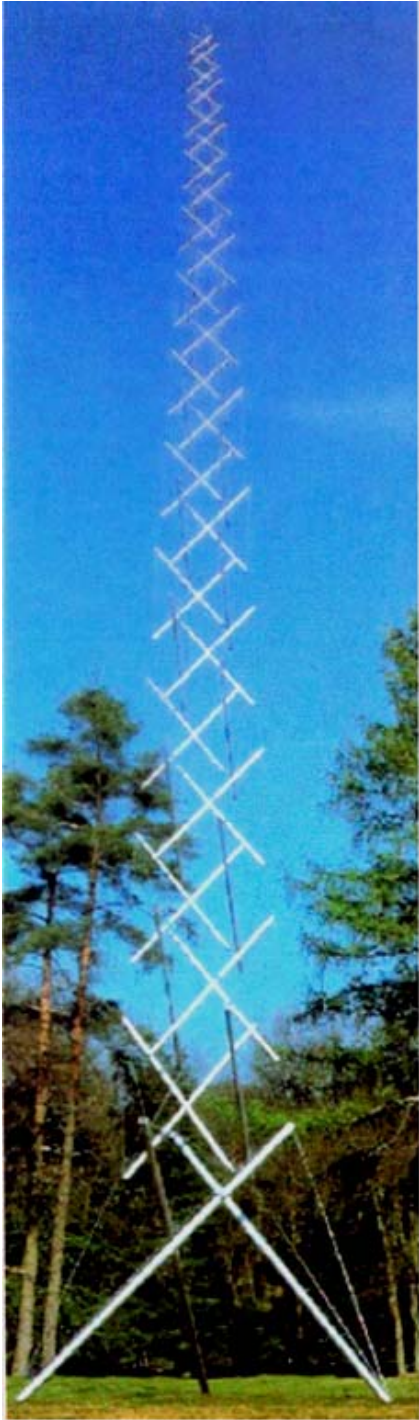
United against infectious diseases

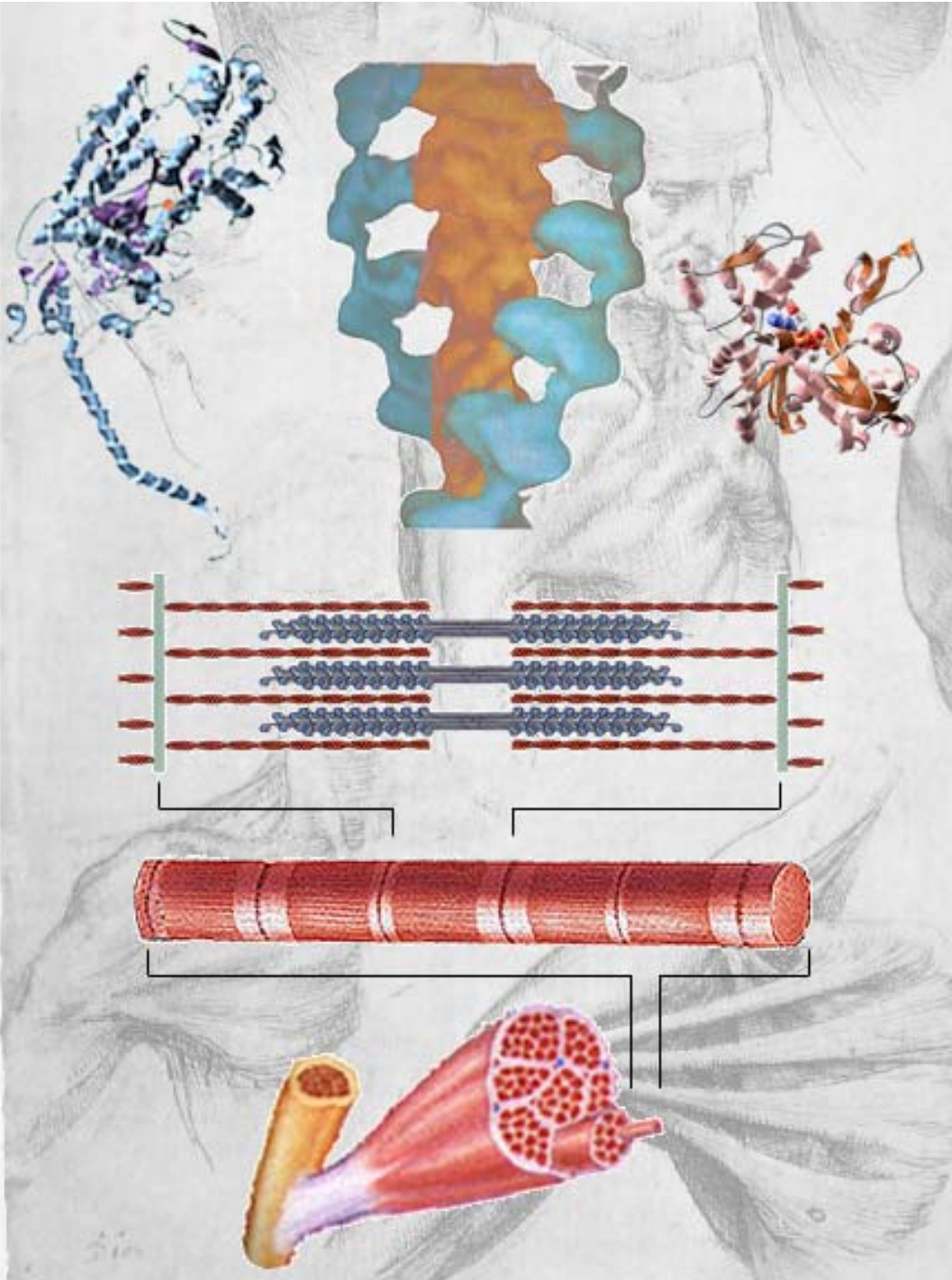
Vision: from the eye to the brain

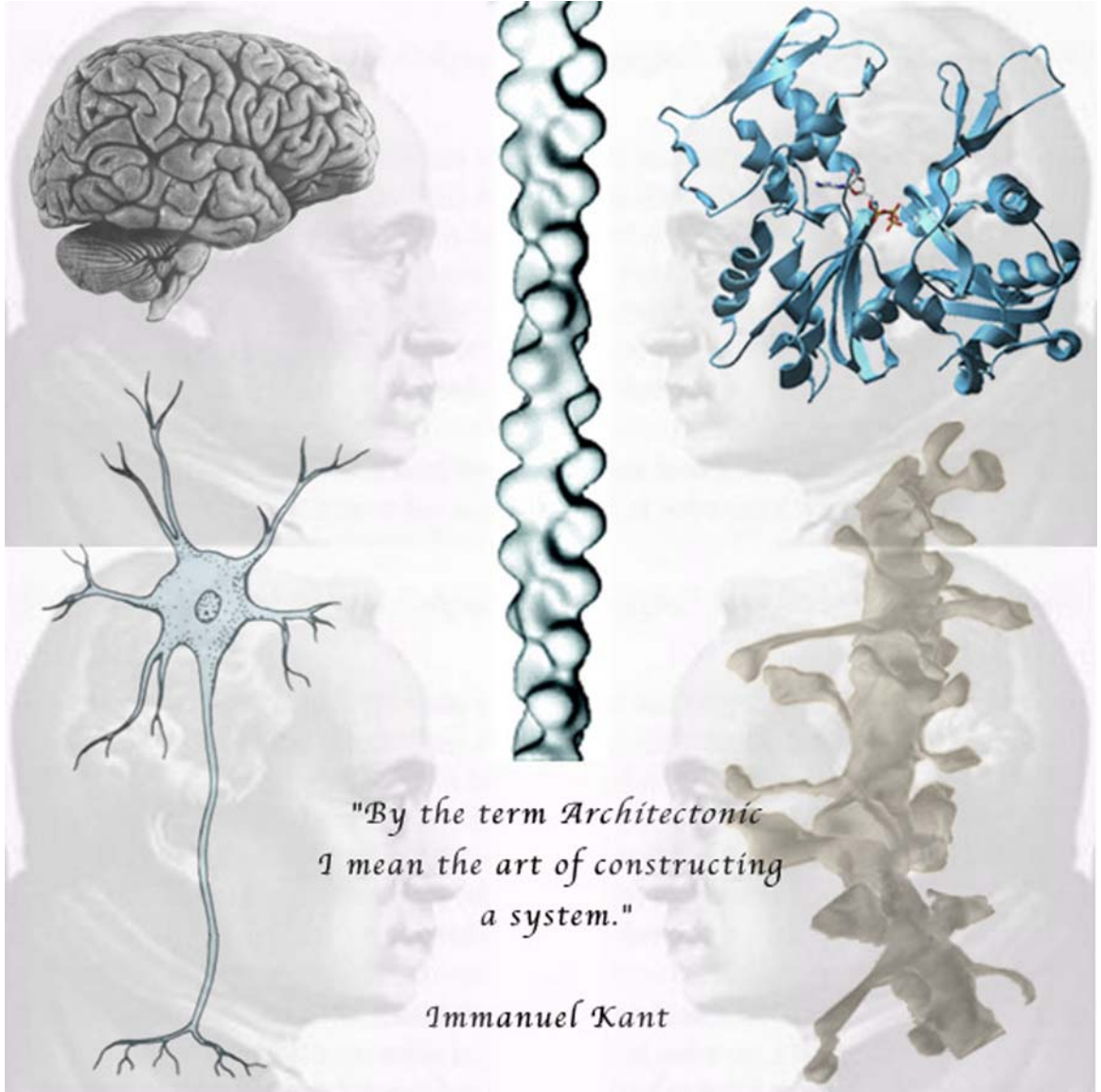


Human Frontier Science Program

19



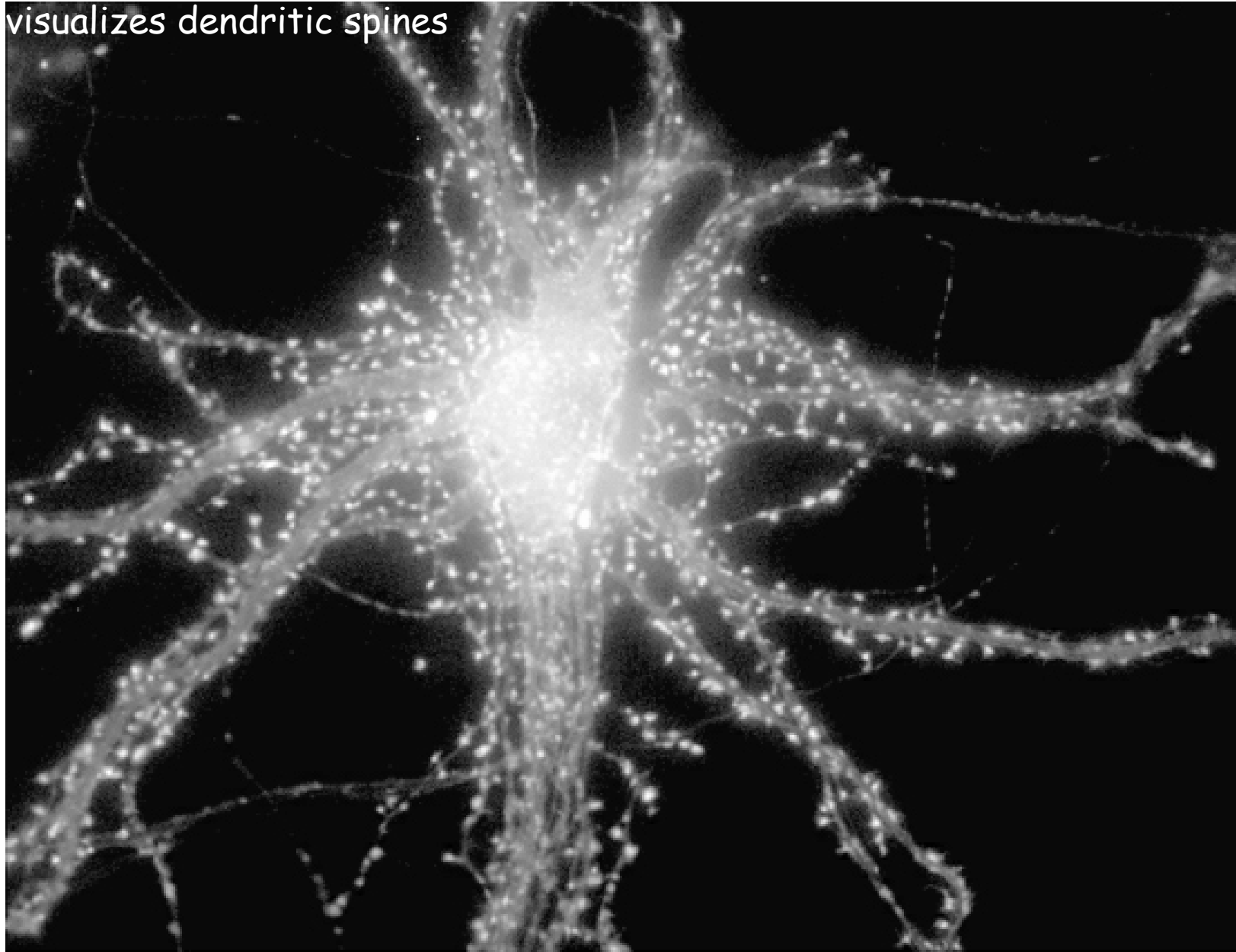




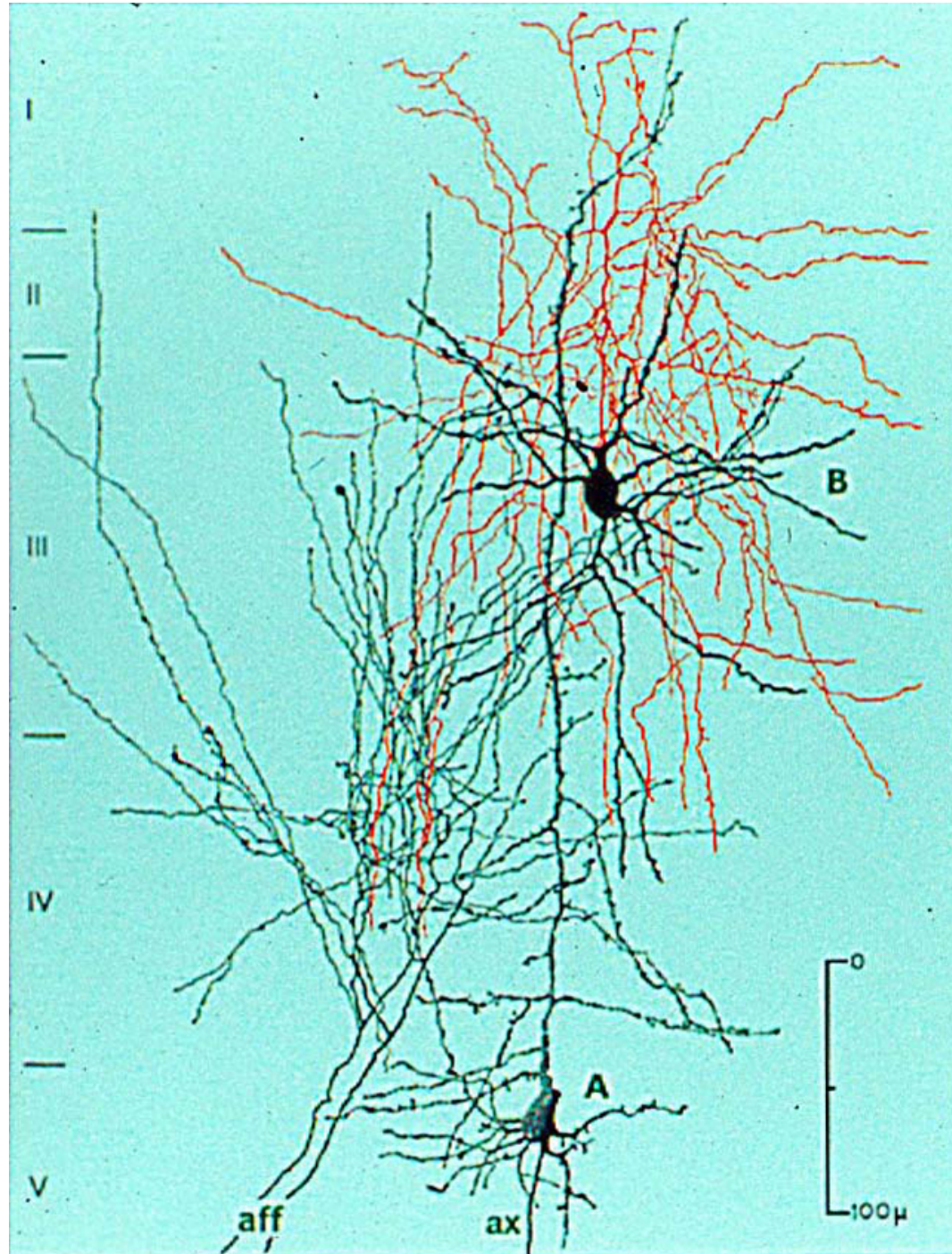
"By the term *Architectonic*
I mean the art of constructing
a system."

Immanuel Kant

Expression of *GFP-actin* in cells from hippocampus
visualizes dendritic spines



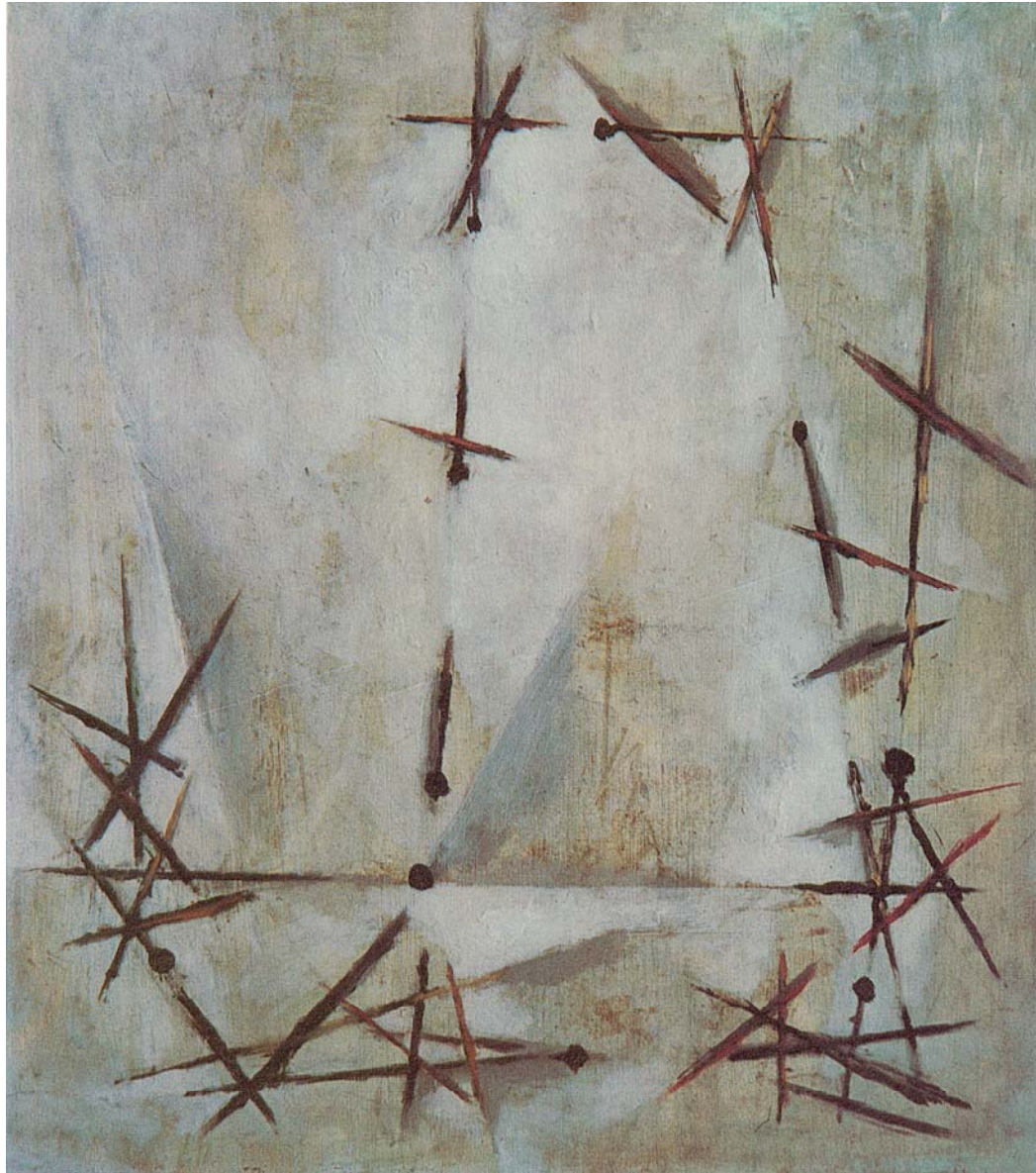
Andrew Matus, *J Neuroscience*, 1998





"The pattern of tensions inherent in a work of art reflects feeling predominantly as subjective, originating within us, like the felt activity of muscle and the stirring of emotion."

Suzanne K. Langer



"It was evident that no single mark, not to mention agglomerations of marks, could hope to stay put optically on a surface."

Richard Hamilton

ON GROWTH AND FORM

BY
D'ARCY WENTWORTH THOMPSON

AN ABRIDGED EDITION
EDITED BY
JOHN TYLER BONNER



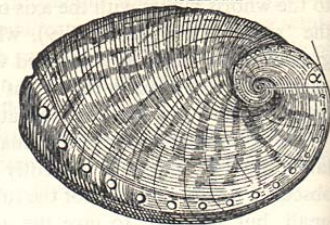
CAMBRIDGE
AT THE UNIVERSITY PRESS

1966

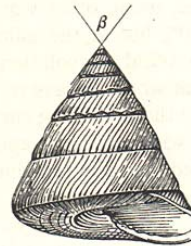
Large α



Small α



Large β



Small β



Large γ



Small γ



Fig. 88. Various gastropods showing the effect of the alteration of different angles. In the top row the shells have large and small spiral angles (α); in the middle row they have large and small enveloping angles of the conical ends (β); in the bottom row there are large and small angles of retardation (γ) which govern the extent to which the whorls overlap. From J. C. Chenu.









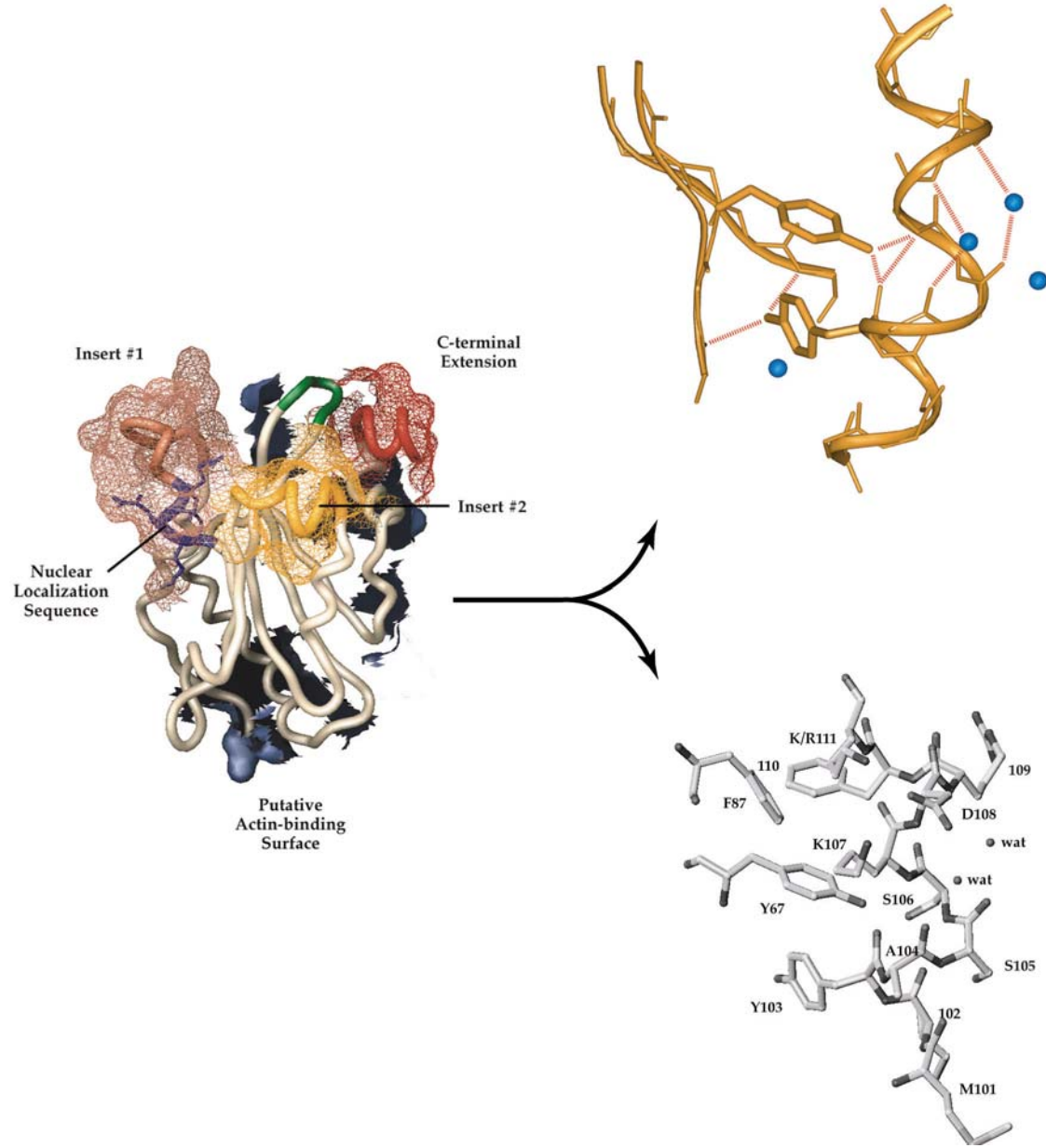
"For the physicist, objects exist on two levels of experience. They are given as directly observed entities of everyday life and the laboratory. But they are also explained as determined by invisible structures and forces that the physicist has tried to imagine through the form of a model with certain properties from which, with the hold of mathematically framed laws, can be deduced the observable qualities of the objects that the model simulates"

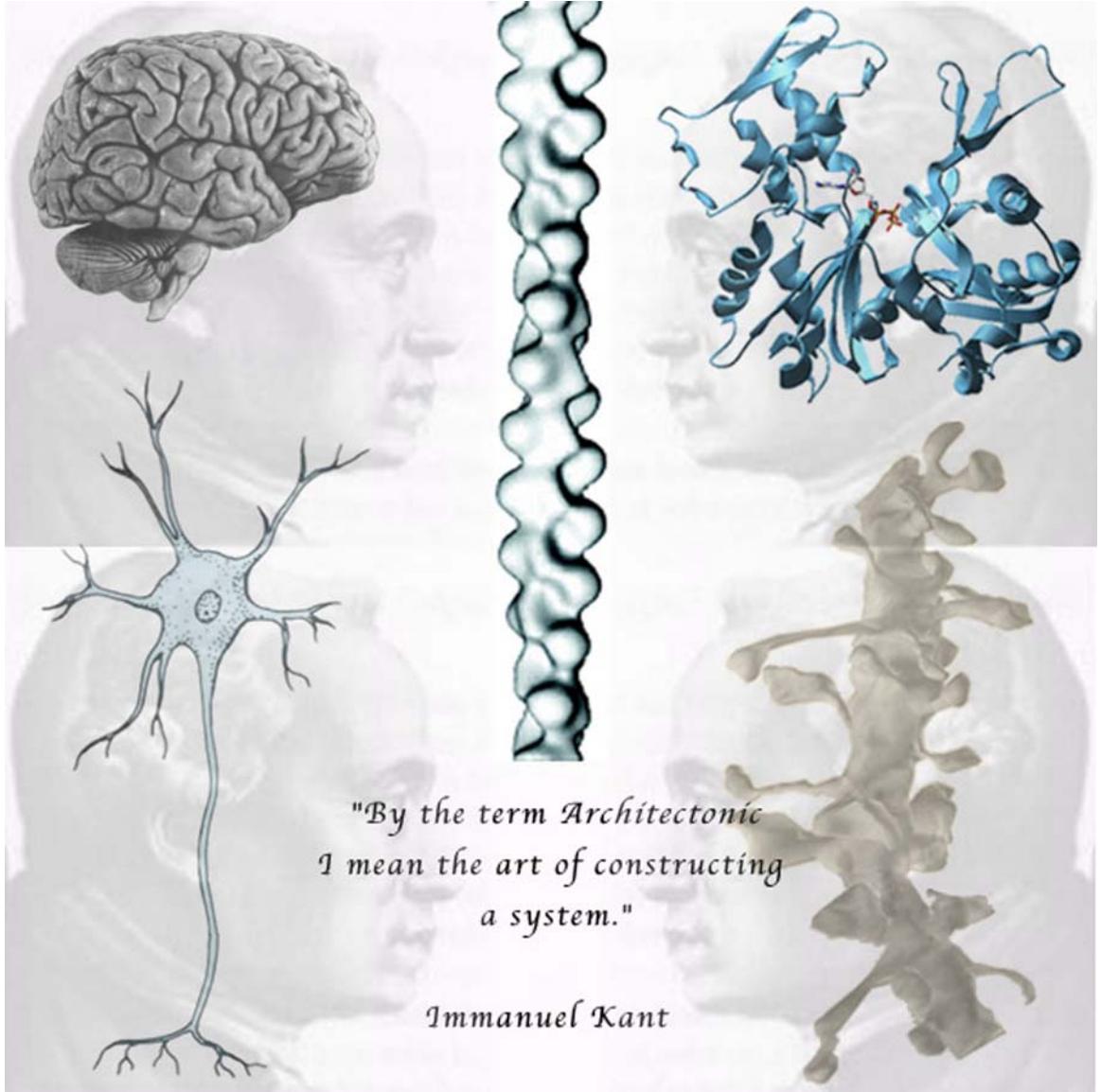
Meyer Schapiro



"For Joseph Stella, as for Marin, the city was the nexus of explosive, form-shattering power"

Barbara Rose





"By the term *Architectonic*
I mean the art of constructing
a system."

Immanuel Kant



"This abstract sculpture, made in the aftermath of WWII, suggests figures dangling in a cage. But if the strange forms evoke figures, it is not their exterior, or outward appearance, but rather some unseen interior quality - *something vital and sublime, some universal force.*" Joseph Jacobs

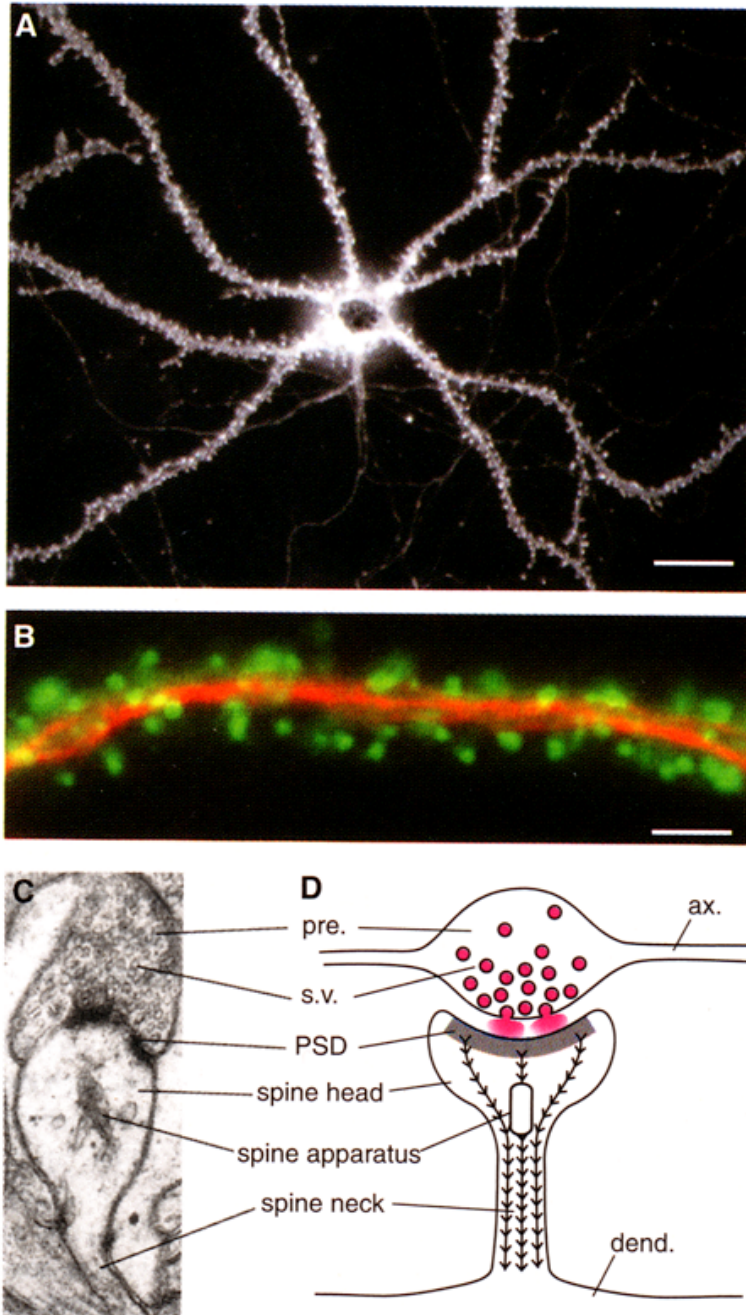


Fig. 1. Structural features of spine-bearing neurons. **(A)** A living hippocampal neuron in cell culture expressing γ -cytoplasmic actin tagged with GFP-actin. The myriad fluorescent dots on the dendrites are spine heads where actin accumulates. Bar, 15 μ m. **(B)** Part of a dendrite from a GFP-actin-expressing cell that was fixed and then stained with antibodies against the dendrite-specific microtubule protein MAP2. Red MAP2 labeling shows microtubules concentrated in the shaft of the dendrite compared to green actin-GFP labeling of actin present in dendritic spine heads. Bar, 5 μ m. **(C)** A single spine synapse seen by electron microscopy, and **(D)** a diagram of a spine structure. The neurotransmitter glutamate (pink) is stored within synaptic vesicles and released into the synaptic cleft where it activates receptors located in the postsynaptic density (PSD). Actin filaments are represented by the barbed lines. ax., axon; pre., presynaptic bouton; dend., shaft of dendrite; s.v., synaptic vesicle. [Images: (A) H. Brinkhaus; (B) S. Kaech; (C) from a micrograph given to the author by the late E. G. Gray]

"Everything is movement; thought is a movement; life is based on movement; death is a movement to which the end escapes us. If God is eternal, you may be sure he is always in motion. God is perhaps movement itself. That is why movement, like him, is inexplicable - like him, profound, without limits, incomprehensible, intangible."

Honore de Balzac ("Peau de Chagrin")

