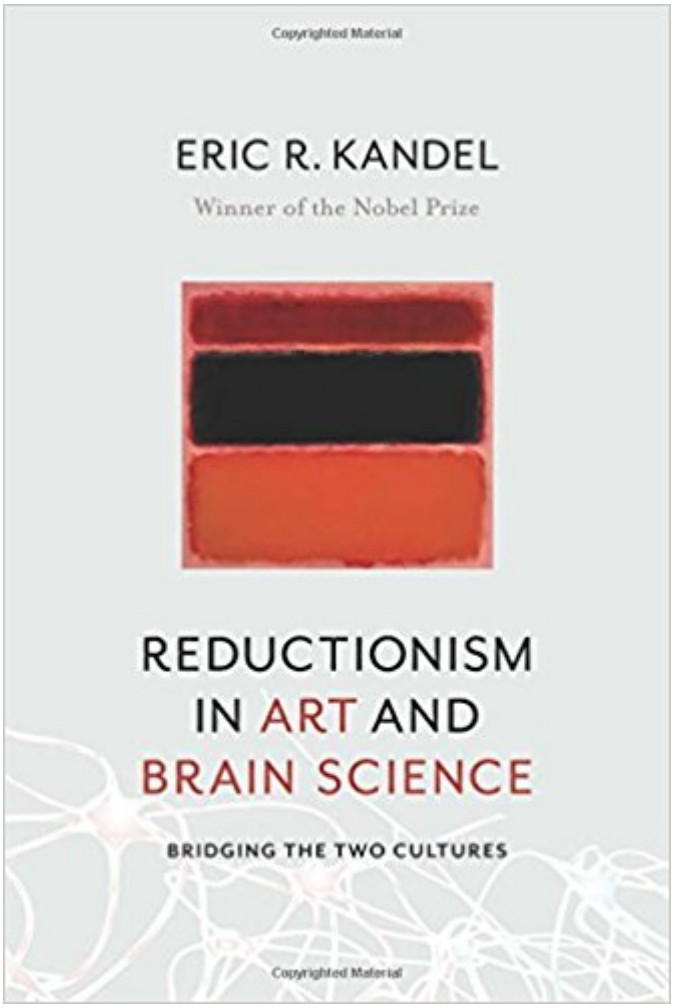
Reductionism In Art And Brain Science: Bridging The Two Cultures



Synopsis

Are art and science separated by an unbridgeable divide? Can they find common ground? In this new book, neuroscientist Eric R. Kandel, whose remarkable scientific career and deep interest in art give him a unique perspective, demonstrates how science can inform the way we experience a work of art and seek to understand its meaning. Kandel illustrates how reductionismÃ¢â ¬â ¢the distillation of larger scientific or aesthetic concepts into smaller, more tractable componentsÃ¢â ¬â ¢has been used by scientists and artists alike to pursue their respective truths. He draws on his Nobel Prize-winning work revealing the neurobiological underpinnings of learning and memory in sea slugs to shed light on the complex workings of the mental processes of higher animals. In Reductionism in Art and Brain Science, Kandel shows how this radically reductionist approach, applied to the most complex puzzle of our timeÃ¢â ¬â ¢the brainÃ¢â ¬â ¢has been employed by modern artists who distill their subjective world into color, form, and light. Kandel demonstrates through bottom-up sensory and top-down cognitive functions how science can explore the complexities of human perception and help us to perceive, appreciate, and understand great works of art. At the heart of the book is an elegant elucidation of the contribution of reductionism to the evolution of modern art and its role in a monumental shift in artistic perspective. Reductionism steered the transition from figurative art to the first explorations of abstract art reflected in the works of Turner, Monet, Kandinsky, Schoenberg, and Mondrian. Kandel explains how, in the postwar era, Pollock, de Kooning, Rothko, Louis, Turrell, and Flavin used a reductionist approach to arrive at their abstract expressionism and how Katz, Warhol, Close, and Sandback built upon the advances of the New York School to reimagine figurative and minimal art. Featuring captivating drawings of the brain alongside full-color reproductions of modern art masterpieces, this book draws out the common concerns of science and art and how they illuminate each other.

Book Information

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Customer Reviews

Eric R. Kandel seamlessly moves between the intricacies of science and art, weaving their histories into a common narrative that illuminates both fields and shows they have more in common than is often assumed. It is a fun and informative read that anyone with a curious mind can enjoy and learn from. (Joseph LeDoux, author of Anxious: Using the Brain to Understand and Treat Fear and Anxiety)Kandel's book, with one foot in the humanities and one foot in the sciences, stands comfortably in both. Writing in deceptively simple prose, not unlike the art he writes about, Kandel lucidly states the biological case for how abstract art challenges us to look so that we can see. (Jim Coddington, chief conservator, Museum of Modern Art)Words like 'genius' or 'renaissance man' are rarely used in these egalitarian times, but such descriptions wouldn't be entirely inappropriate for Kandel, who is renowned for his work on memory. He has now written a remarkable book full of poetic insights without compromising scientific rigor. (V. S. Ramachandran, author of The Tell-Tale Brain: A Neuroscientist's Quest for What Makes Us Human)Aiming to lessen the gap between the cultures of art and science, Kandel forwards new ways of considering abstract art through the model of reductionism: less is more when it comes to stimulating the brain's creative abilities and our aesthetic responses. (Emily Braun, Distinguished Professor of Art History, Hunter College and the Graduate Center, CUNY)In this engaging and brilliant exploration, Kandel illuminates the beauty and power of both abstract art and the brain and mind that unravels it. It is a bold and exciting story about the modern revolution in art and brain science that bridges the traditional chasm between the culture of the arts and sciences and helps us understand and experience the most challenging art with the depth it deserves and the joy it enables. (Walter Mischel, author of The Marshmallow Test)Eric Kandel's new book, Reductionism in Art and Brain Science is a beautiful integration of visual art and neuroscience. The book engages C.P. Snow's theme of two cultures- the humanities and the sciences- and provides an artful window into the science of the mind through his fourteen nicely written chapters that include elegant figures in visual art and neuroscience. While the book de-mythologizes the idea of reductionism, it also importantly provides a sense for knowing an object and the objects to be known. This is a must read for both neuroscientists and anyone interested in the visual arts and humanities. (Jay Schulkin, Georgetown University)[A] fascinating survey of mind

science and modern art.... Kandel presents concepts to ponder that may open new avenues of art making and neuroscientific endeavor. (Publishers Weekly)[An] intriguing treatise. (Nature)Recommended for those interested in the intersection of psychology and art. (Library Journal)The effort to complete this book will be well rewarded.... C.P. Snow would be proud. (Neurology Today)Unique and thought-provoking. (Times Higher Education)Elegant and entertaining. (Wall Street Journal)[Eric Kandel's] new book offers one of the freshest insights into art history in many years. (Salon)

Neuroscientist Eric R. Kandel demonstrates how science can inform the way we experience a work of art and seek to understand its meaning. Kandel illustrates how reductionismÃ¢â ¬â ¢the distillation of larger scientific or aesthetic concepts into smaller, more tractable componentsÃ¢â ¬â ¢has been used by scientists and artists alike to pursue their respective truths. He draws on his Nobel Prize-winning work revealing the neurobiological underpinnings of learning and memory in sea slugs to shed light on the complex workings of the mental processes of higher animals.

I do not know how this concise, clearly written, well-illustrated synopsis of the relationships of psycho-neurobiology and art appreciation will be received by the general reader. I regard this as an important book, but then I am a medical scientist and an artist already familiar with the experimental and historical evidence of the two associated disciplines. The 20th century saw a new approach to art and mental science, both applying narrow, minimalistic, reduced approaches to grasp the marrow of the larger processes. (Not covered is the Far East Asian form of art whose ink paintings have been for centuries simplistic with sparse lines and broad spaces that the viewer connects and fills in to construct familiar forms.) The primary focus is on how we see, how photon arrays falling on our retina are deconstructed, channeled, analyzed by element and position or orientation, and then associated through memory with learned forms, and how learning requires new synapses and stimulated molecular responsive pathways. Modern art has been an exploration in parallel with neuroscience. Cubism with its combined perspectives and discontinuity, abstract geometric paintings of simple, inherently or acquired emotional colors and color juxtapositions and line paths, and complex arrays of indefinite forms suggestive of texture or movement challenge the viewer, probing deep into the senses and perception. Metaphor was replaced with direct expression; and one artist, Mondrian, had mystical intentions in his later paintings while another, Rothko, whose works many regard as spiritual, had no such objective.Author, Nobel Prize-winner, Eric R. Kandel,

whom some viewers of PBS and Charlie Rose know through his series of roundtables on the brain, is mainly a philosophical physicalist, but he does include the feedback looping of bottom-up, emergent reductionism and top-down, organismal holism of learned and experiential associations. Indeed, much of modern art is a mutually dependent creative union of form and receiver, i.e, not what the art is about, but instead what the viewer feels, imagines, or thinks. The book presents seminal examples of artistic insights. Artists, such as Mondrian, Klee, and Kandinsky, wrote essays about the psychological effect of certain artistic techniques and presentations, and Kandel explains the neuroscience behind it. Color fields present a psycho-neurological problem, as people perceive a given color differently, dependent on distance; lighting intensity, hue, and angle; contrast; adjacent hues; and in the instance of color-blindness, neurology. Some artists create optical illusions and stimulate optic centers, with the viewer perceiving shapes, hues, contours, and elevations that are not actually present, further questioning our reality. Other artists take mundane items or icons and craft their forms or images into a different way of seeing, as in Pop Art, bringing sociological and socio-political aspects into fine focus. I hope that this small book finds its way into science and art curricula, interdisciplinary studies, and into the hands of the general reader.

Everything Kandel writes, needs to be read. That said, if you are interested in art and paintings and you are also a connoisseur of the Human Brain, this book is the perfect gift you can get for yourself. I would have just loved to know more about arts to enjoy this book as it should, anyway it’s clear and full of pictures, so don’t worry.Sono sempre stata dell’idea che sia necessario leggere qualsiasi cosa scritta da Eric Kandel; detto questo se siete interessati all’arte e alla pittura e vi considerate un "fine conoscitore" delle neuroscienze, questo libro ÃƒÂ© il regalo migliore che possiate farvi. Io avrei solo desiderato conoscere piÃƒÂº storia dell’arte per apprezzarlo in toto, ma non preoccupatevi perchÃƒÂ© ÃƒÂ© pieno di immagini.

A special book about the connection between science of mind and art, particularly modern painting. The author is a famous expert of neurology questions and he explicates to the lector how the interpretation about the better painters of 1900 is correlated to the achieving of new informations.Those painters have had their approach reading in their works particularities of the universe, whom they have seen in a way between subjective and objective. So the perception has moved the inner connection of the mind and the student of art has correlated with the memory all that he learned.

A beautifully designed/printed book, but understand that this was written by a neuroscientist. Kandel treats movents of art as one gestalt movement towards a reductivist understanding of the human mind (e.g. eschewing concepts of beauty and idealism in favor of looking at how simple forms can elicit complex responses in viewers via activation of common, basic neural pathways). In this sense, it is a gross oversimplification of the history of art that many will find infuriating.What makes this book interesting is the privileged position the reader is placed in: to glimpse into the mind of a first class practitioner of the "hard sciences" and to see how Kandel thinks about art. The book lends itself to hard thought about the rift between science and the humanities.

I am an art teacher and one of my students, a former physicist, wished to expand my way of thinking about art so he recommended this book. I find the science difficult to understand and read much of it twice; however, I like the way Kandel meets art and science through reductionism in both studies and the bottom up, top down way of viewing art is quite interesting. Still getting through It, but intend to finish it, definitely!

Kandel offered profound insights about how specific types of art influence different types of perceptions. Clearly written with compelling examples, it enabled me to make numerous connections to social science theories. Further, it revealed implicitly, how art might be used to influence key behaviors. I am grateful for this emergent research! I look forward to reading more and linking it to my work.

Outstanding - every school board member should read! Provides insight to benefits of math and art! One of the most interesting and informative books. It was a difficult read since I am not that familiar with the minamalist artist. Keep doing reasearch on artist. Very intellectual and informative. Highly recommend for art lovers, biologist and mathematic lovers.

As a scholar who has dedicated my academic career to understanding the functioning of human behavior with regard to art, its appreciation, and its role in society, and while an admire of Professor Kandel’s work to address the same from the perspective of the science of biology, I found this particular work light on both the analysis of art and the analysis of the brain. I had hoped for more.

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