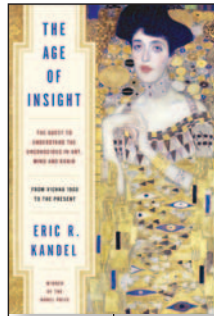


books

ARTFUL THINKING

The Age of Insight: The Quest to Understand the Unconscious in Art, Mind, and Brain, from Vienna 1900 to the Present

by Eric R. Kandel. Random House, 2012 (\$40)



What happens when an obscure interest in early 20th-century Austrian art meets up with an encyclopedic knowledge of brain science? In three words, action potentials fly. Enough neurons were firing to ignite most people's heads when Kandel wrote this ambitious 672-page book about possible ways in which art and modern brain science can enrich and inform each other.

In *The Age of Insight*, Kandel, a neuroscientist and Nobel laureate in medicine, gives us two extraordinary books in one. The first is about five influential geniuses who overlapped to some extent in the early 1900s in Vienna, Austria: visual artists Egon Schiele, Oskar Kokoschka and Gustav Klimt; writer Arthur

Schnitzler; and the father of psychoanalysis, Sigmund Freud. Kandel's fascination with this space and time is more than professional; he was born in Vienna in 1929 and forced at age nine to depart from his country with his family because of increasing violence against Jews.

Schiele, Kokoschka and Klimt—together the Austrian expressionists—abandoned realism in art in favor of abstract and often sensual ways of using a canvas to reveal the inner mind of a portrait subject. Schnitzler experimented with stream-of-consciousness writing for the same end, and Freud virtually defined the modern concept of the unconscious and developed techniques for probing it for therapeutic purposes.

What is in effect a separate book—the second half—reviews the recent explosion of research in brain science, bringing us up-to-date on what is currently understood about the neural correlates of vision, memory and creativity and arguing convincingly that a great deal of important brain activity is in fact beyond conscious awareness.

Though astonishing in both depth and breadth, *The Age of Insight* is lacking in one respect: Kandel's unwillingness to criticize the ideas he is presenting or at least to wonder about their validity. He asserts, for example, that artists "intuit" properties of the brain when they use lines or colors in certain ways to evoke particular reactions from viewers, but that contention goes well beyond the facts. It is far more likely that artists simply experiment with the medium, adopting the techniques that produce desired effects and discarding the rest.

Kandel's reluctance to self-criticize is especially unsatisfying when he asks "what and where" consciousness is. He declares that the experience of consciousness is correlated with neural activity in "a vast number of regions distributed throughout the brain." Such activity, he says, "ignites consciousness"—which is what, exactly, and where? Kandel never says.

The Age of Insight does not unravel all the mysteries of art or solve all the problems of neuroscience, but it is an amazing ride, at the very least showing you the workings of one of the world's most extraordinary intellects in a frenzy of creative motion. —Robert Epstein

WHEN SPARKS FLY

Imagine: How Creativity Works

by Jonah Lehrer. Houghton Mifflin Harcourt, 2012 (\$26)



What do *Toy Story II*, Post-It Notes and *West Side Story* have in common? According to Lehrer, they all emerged from a unique combination of context, circumstance and attitude—the stuff of creativity.

In Lehrer's new book, *Imagine*, the prolific science writer delves into one of the most familiar—and mysterious—capacities of the human mind: the "ability to imagine what has never existed." Through a whirlwind tour of innovative personalities, Lehrer covers various facets of creative thinking: the importance of casual conversations that can lead to unexpected ideas, the value of debate and criticism in challenging our assumptions, and the necessity of focusing our attention on a single task. He introduces us to a Pixar computer animator in Silicon Valley who finds his greatest insights when his ideas are ripped to shreds at daily group meetings and to an autistic surfer whose obsession and comfort with the ocean lets him improvise moves never seen before.

Creativity, as Lehrer describes, is not an individual "gift," a lucky trait that some people are just born with; it comes from a combination of processes. He highlights what spurs creativity on a small scale, noting, for instance, that a small fold of tissue in the brain called the anterior superior temporal gyrus

(what he calls the "neural correlate of insight") becomes active seconds before an epiphany. He steadily works all the way up to a large scale, discussing how serendipitous meetings in a sprawling metropolis can spark innovation by exposing us to unfamiliar ideas.

Lehrer also sprinkles in useful tips to feed our own imagination. Feeling stuck? Go for a walk or take a warm bath. According to a British scientist, interruptions are crucial to forming new ideas because the mental break lets your brain turn inward to notice stray thoughts and insights. Or consider painting the walls blue: one study suggests the color can double your creative output by triggering associations with the sky and the ocean. The mental relaxation associated with these natural milieus helps to stimulate our imagination.

The research that Lehrer describes defies conventional wisdom. The traditional form of brainstorming—free association with only positive feedback—might seem productive, but it does not work. Creativity actually thrives on criticism and debate because it forces us to engage with new ideas.

For a book about creativity, Lehrer's approach can often feel formulaic: an anecdote here, some history there, a few scientific studies interspersed. Even so, the book is comprehensive, presenting a clear picture of our current scientific understanding of creativity. By exploring the moving parts of creative genius, Lehrer allows us to see what makes our own imagination tick.

—Lena Groeger