



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

Eric R. Kandel

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A brilliant book by Nobel Prize winner Eric R. Kandel, *The Age of Insight* takes us to Vienna 1900, where leaders in science, medicine, and art began a revolution that changed forever how we think about the human mind—our conscious and unconscious thoughts and emotions—and how mind and brain relate to art.

At the turn of the century, Vienna was the cultural capital of Europe. Artists and scientists met in glittering salons, where they freely exchanged ideas that led to revolutionary breakthroughs in psychology, brain science, literature, and art. Kandel takes us into the world of Vienna to trace, in rich and rewarding detail, the ideas and advances made then, and their enduring influence today.

The Vienna School of Medicine led the way with its realization that truth lies hidden beneath the surface. That principle infused Viennese culture and strongly influenced the other pioneers of Vienna 1900. Sigmund Freud shocked the world with his insights into how our everyday unconscious aggressive and erotic desires are repressed and disguised in symbols, dreams, and behavior. Arthur Schnitzler revealed women's unconscious sexuality in his novels through his innovative use of the interior monologue. Gustav Klimt, Oscar Kokoschka, and Egon Schiele created startlingly evocative and honest portraits that expressed unconscious lust, desire, anxiety, and the fear of death.

Kandel tells the story of how these pioneers—Freud, Schnitzler, Klimt, Kokoschka, and Schiele—inspired by the Vienna School of Medicine, in turn influenced the founders of the Vienna School of Art History to ask pivotal questions such as What does the viewer bring to a work of art? How does the beholder respond to it? These questions prompted new and ongoing discoveries in psychology and brain biology, leading to revelations about how we see and perceive, how we think and feel, and how we respond to and create works of art. Kandel, one of the leading scientific thinkers of our time, places these five innovators in the context of today's cutting-edge science and gives us a new understanding of the modernist art of Klimt, Kokoschka, and Schiele, as well as the school of thought of Freud and Schnitzler. Reinvigorating the intellectual enquiry that began in Vienna 1900, *The Age of Insight* is a wonderfully written, superbly researched, and beautifully illustrated book that also provides a foundation for future work in neuroscience and the humanities. It is an extraordinary book from an international leader in neuroscience and intellectual history.

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

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Janne says

It took me a while to read this whole book: I had to intersperse it with lighter fare, but it was totally worth the weight of the hardcover book on my chest. The first half of the book was my favorite. In it Kandel narrates the history of the artistic and scientific world in the Vienna of the turn of the 20th century. With his neuroscience background, Kandel tries to explain how our brain respond to visual art, and how great artists have an intuitive understanding of that. Also, during that exciting time, Freud's ideas are becoming more spread and artists and scientists strive to incorporate those ideas into their own work. The second half is more scientific, describing experiments and theories of how vision works and how the brain responds and interprets visual stimulation. A very exciting enlightening book.

Susan says

Actually three books in one. The first is Vienna 1900 and includes a fine introduction to Freud as well as three artists – Klimt, Kokoschka, and Schiele. (The latter can be quite off-putting, but is a good example for some of the points made later in the book). The largest part of the book is devoted to understanding how the senses and brain perceive and interpret art and includes a truly phenomenal overview of about a century of brain research. The third book is more philosophical and explores creativity and consciousness. Extremely well written and illustrated, for anyone interested in psychology, perception, or neuroscience

Stephen says

One of my favorite books of recent times. Kandel is a neurologist, and a great writer. His neurology books are thus terrific. I was suspicious of this book: a general theory of art and in particular, an analysis of Viennese Expressionism? My suspicion was linked to those artists being some of my favorites ever. Well, it turns out Kandel has an amazingly sensitive eye for art and also avoids any sense of reductionism. He uses Gombrich a lot here. This book is colossal. Brilliant art history, brilliant science and beautiful reproductions. Learned a lot about Klimt, Schiele and Kokoshka.

Robert says

An amazing book that bridges science with the arts; beautifully illustrated and challenges the reader to understand the connection between the rational and emotional parts of our brain. A real tour de force.

Monica Davis says

A well structured treatise on the conceivable (perhaps necessary) convergence of disciplines from the arts and sciences to reach a more comprehensive understanding of the human mind. In the context of the subjects the author has chosen, he offers illustrations and case studies as examples to supplement his compelling arguments. Kandel's "Insight" gives one pause to reflect on and gain a deeper appreciation of not only art forms, but the world in general.

Karen Kobi says

I read this book a few months ago before I traveled to Vienna. It was an excellent introduction to Vienna at the turn of the last century. In addition, "The Age of Insight" also provides a rich historical guide to major thinkers in neuroscience. Be sure to read the last chapter, "Knowing Ourselves: The New Dialogue Between Art and Science." That chapter alone is worth the price of the book.

Rob Boone says

This is one of the most fascinating things I've read, and it's remarkably well-written. By exploring early 20th century Vienna (Klimt, Freud, Kokoshka), Kandel explores all of us. The book is primarily about our relationship to art, but ultimately, it's about our striving, if you subscribe to the belief that art is the highest point in the pyramid of human achievement. What we strive for defines us more accurately than any other measure, and Kandel explains quite well how what we currently strive for began in this nearly perfect city.

Incidentally, it also bumped Vienna up a bit on my to-visit list.

Marzie says

This promises to be a long, dense read but I already am fascinated after the first two chapters....

Kim Lacey says

My favorite book of the year, so far. Kandel is truly champions the conversation between the sciences and the humanities. Age of Insight is a beautifully written and illustrated book (in other words, I'm glad I splurged on the hardcover instead of the Kindle version--there are hundreds of full color images). If you have any interest in how art and science influence each other, this is a must read.

Annie says

This is, quite honestly, the best book I have read this year. It will probably be the best book I read all year too. It combined so many of my interests (art, psychology, neurology, art criticism, and art history) and was written so beautifully and convincingly that I enjoyed every page of it. I picked it up from the library because I was researching Klimt, and this was just a whimsical find. I need to give in to flights of whimsy more often. I think I have a greater appreciation for Freud and his contributions to psychology now than when I had to take a developmental psychology in college, quite honestly. I can't sing this book's praises highly enough.

I would read anything else this author wrote; Mr. Kandel has definitely made a fan.

Adrian says

Best book about bridging the two cultures: art(humanitarian) and science. The author already has a Nobel prize, so you know you are in good hands. We should invent a new award for books like these actually. It is even better if you read the book in Vienna as you can also see some of the paintings in the Upper Belvedere and visit the other 2 museums (Josephinum and Freud) that had a big role in Kandel's life and in the early history of the ideas behind this book. Will try to read it again after I read some of the books included in its gigantic bibliography. Well done! Put it on the same shelf with Gombrich and Arnheim. I would also recommend to read this book following Kandel's autobiography: *In Search of Memory*, as the two books intersect in countless ways. I almost think he intended to write a 1000 pages book to cover both subjects: his life and the Vienna influence on modern research (especially in medicine, biology, psychology, literature, art). The influence of the Vienna Circle on the physics and mathematics of the 20th century is left aside maybe because the author is not an expert on these topics. When you look back and see that you had people like Godel, Wittgenstein, Klimt, Freud, Jung (for a brief period) and others living in the same city, you can only wonder how the world would have looked like without the two wars?

Carol says

Because I have listened to Eric Kandel several times when he discusses what neuroscience knows about human brain behavior when a specific area of the brain has been damaged, I anticipated this book would follow that scientific endeavor. However, Kandel (a recipient of the 2000 Nobel in physiology) centers this book on understanding the unconscious as well as the conscious in art and begins with art in Vienna in the early 20th Century. He addresses what those artists were portraying as they shifted from 3 dimensional to 2 dimensional art as they interacted with psychiatrists in the small community of Vienna during that period; but he is also most insightful in the research done on the consciousness of the beholder. The book only lagged when he gave a total scientific description of which section of the brain energizes for each act of perception, awareness, empathy, creativity, etc. Unless one is educated in the activity of the brain, one probably doesn't actively question what section of the brain is activated during each activity of the day. The rest of the book is spellbinding as well as awesome.

Alejo says

A century after the conversation between neuroscience, art and psychology began a few questions have been already answered and this book presents them in a fascinating way.

The most interesting thing about this book though, is the possibility of contemplating the vastness of the mysteries of the brain and to take a sneak peek at the new questions posed by this conversation that scientists and thinkers are challenged to tackle in the years to come.

Hadrian says

Kandel's topic is one of the most ambitious. Here he makes an attempt to link together the arts and the sciences. Where and how does he do this?

This is a book in two parts. The first is an overview of fin de siècle Vienna and all of its accomplishments at that time. Our author lived there when he was a boy, so he holds a fond attachment for this image of the city as it was before 1918 (and before 1938).

There he begins with the great discoveries on medicine and psychology which were made in that city. He talks about Dr. von Rokitansky, who advanced the scientific approach to medicine, and Dr. Freud's own famous theories which led to the formation of psychology and advanced the idea of the unconscious.

But Vienna was not just a city famous for its scientific discoveries. This was a city which was fermented revolutions in art. This was the Vienna of the author Arthur Schnitzler, of the art critics Eric Gombrich and Alois Riegl, and also

of Klimt,

of Kokoschka,

and of Schiele.

But these parts of Vienna are not separate. The artists have their webs of influence, but so do the psychologists. Freud's theories of sex and unconscious desire grew in power and influence, and artists pondered the ideas of unchained animalistic desires buried deep within every human. Klimt experimented with bright colors and geometric shapes to express these emotions. Kokoschka went more for exaggerated faces; Schiele went for exaggerating the proportions on his nudes. All three grappled with the implications of these new ideas on sexuality. Their results still *épater le bourgeoisie* today (if the other reviews are any indication).

This was, at least in Schiele's case, their intention. One of his most famous nudes is of himself masturbating. This is, of course, a bit of shock value, but also because of the then-popular idea that masturbation causes

insanity. He is exposing a wild, inhuman nature through that art.

Now is there evidence that these authors read Freud? Not for all them, but the ideas are so widely discussed that it is possible.

The second part of the book is an extensive discussion of neuropsychology, cognition, and the physical processes behind the formation of memory and the interpretation of sensory perceptions.

If that seems like an strange jump, recall that our author, the boy who fled Vienna with his family in 1938, is Eric Kandel. He is the 2000 Nobel Prize Winner in Medicine who understood the physiological basis of memory by studying sea slugs. Memory, in this sense, is viewed by the formation of new connections between neurons.

But what can neuroscience teach us about aesthetics and art appreciation? Kandel's approach is not to completely overturn the past studies of art, but to supplement them with what we know about the brain. He talks about sharp contrasts in colors, and how the photoreceptor cells in the eye pick out small details.

Another speculation he has is how we perceive faces and how we perceive emotions in other human beings. Studies of what we observe in other people show we focus on the face (specifically the eyes and mouth) and to the hands. It is in understanding this focus which provides insight into one of the reasons why we appreciate this art - the faces which look directly at us, their distorted yet familiar looks, the thin spindles of Schiele's hands.

So what are the sorts of things that 'neuroaesthetics' can tell us, with at least some degree of backing? That humans are drawn to faces and facial expressions, that we can enforce our views of depth perception on flat images, but also that our perception of art depends on the connections and memories we have made in the past. If this is what we can learn from a new and fragmentary field (albeit mostly through speculation as made by an expert) then I admit some strong interest in what would happen next. Although it has been a long and sometimes quixotic dream to connect the arts and the sciences, Kandel here has made some interesting steps towards a new method of doing so.

A provocative and deeply engaging book.

Randol Schoenberg says

This is an incredible book, a real tour de force in explaining in layman's terms some of the most amazing and important recent developments in neuroscience, biology and psychology, at the same time relating them to the artistic achievements of Klimt, Schiele and Kokoschka in Vienna 1900. If there is a flaw, it is Kandel's avoidance of any discussion of music, and especially of Schoenberg, who also painted artworks that fit much better into his thesis than those of Klimt, Schiele and Kokoschka. The book would have benefited from a reading of the Schoenberg-Kandinsky correspondence. After all, it does not make sense to discuss the influence of the unconscious on art without quoting Schoenberg ("art belongs to the unconscious"). Nevertheless, the book is fascinating to read. And naturally on the science side, Kandel, a nobel prize winner for his work in neuroscience, is unparalleled. His goal is to make the science accessible and to open a dialogue between the sciences and humanities. In fact, the science is tough for someone unfamiliar with the biology of the eye or brain, but after 500 pages, even a layman will feel like he/she understands a bit how things really work inside our heads. Recommended for anyone who wants to understand the human brain and behavior, or enjoys good art, or both.

Kunal Sen says

My year ended on a high note, by finishing this most remarkable book – Eric R Kandel’s *The Age of Insight – The Quest to Understand the Unconscious in Art, Mind, and Brain from Vienna 1900 to the Present*. The timing of this book was remarkable for me because it happened on the same year when my primary focus was to find a bridge that I can use to cross at will between my two passions – science and art. Right after I wrote a blog on this topic (*Artists without Science*), my Art Historian friend Arjun Gupta recommended the book to me. I immediately grabbed it and started reading, but quickly realized that it is not a book that I should read quickly, during my long daily commute, but rather cherish as a good bottle of wine, slowly, deliberately, and take my time to explore the art that the author uses to illustrate his point. (There was also a practical side to it – the book was too heavy to be carried around).

Let me start with the author. Eric Kandel is a neuroscientist who has been doing some of the most remarkable work in his field, and during a time where there is a revolutionary explosion of new ideas, theories, and experimental results that are changing our view of the mind in the most fundamental ways. Kandel’s work on the mechanism of memory also earned him a Nobel Prize in the year 2000. What makes Eric Kandel unique is not only his scientific authority, but also his deep understanding of the history of visual arts, and his knowledge and understanding of one of most remarkable time and place when it comes to modernist art – Vienna around the turn of the last century.

Kandel starts the book with a detailed recounting of Vienna around 1900. It was a remarkable place and time when a number of brilliant people came together, each passionately involved in understanding the human mind, but from entirely different perspectives, and most unusually, they actually talked and exchanged ideas. There were philosophers like Moritz Schlick, Rudolf Carnap, Kurt Gödel, and Ludwig Wittgenstein, musicians like Gustav Mahler, Arnold Schönberg, and Alban Berg, architect Otto Wagner, writer Arthur Schnitzler, and artists like Gustav Klimt, Egon Schiele, and Oskar Kokoschka. A common theme that connected these individuals were the evolving understanding that much of what happens in our mind is below the level of conscious thought. The new scientific ideas prompted the artists to look deep inside and explore and expose what is hiding deep within our minds.

Such interactions, between people of different disciplines does not happen all that often, but it shows the fantastic creative potential when thinkers cross the line and take a look at what others are doing. We are incredibly lucky to live in one such period, when suddenly the walls between a number of different domains of knowledge are starting to collapse. Many age old philosophical questions are now being revisited as scientific problems. We are making remarkable progress in understanding mysterious phenomenon such as consciousness. We are connecting our sense of morality with the biology of evolution. This book does a remarkable job of connecting our sense of visual aesthetics with structures in our brain, the complex interactions between different parts of the brain, and our evolutionary history. It shows how successful artists “discover” these properties subconsciously, and learns how to exploit them to create the desired emotional effect on the audience. It also shows how the mind of the beholder, and not just the artist, that is at play here. In the rest of the book he carefully pick up different aspects of visual aesthetics and connects them with what we know today about the brain and the mind. It is a fascinating journey, beautifully illustrated with various artistic examples. Many of these pieces were familiar to me, but the book provided an entirely new perspective of looking at them. That to me is the essence of a great book and a great idea -- it makes you look at familiar things in novel ways.

The author does not claim that we understand it all. These are just scientific possibilities at this point, were some ideas are more rigorously explored than others. But just as the brilliant neuroscientist V.S. Ramachandran also points out in his book *The Tell-Tale Brain – a Neuroscientist’s Quest for What Makes Us Human*, it opens the door that these speculative ideas can finally be explored experimentally. This is a huge step from purely conjectural thoughts where there is no way to check if the idea can actually stand on its legs.

It is just as important to realize that obtaining a deeper understanding of why a certain piece of art work emotionally does not steal away from the pure enjoyment. In fact I believe, from my own subjective experience, it could sharpens one’s ability to enjoy art, and thus make the pleasure even more pleasurable. It is no different than our understanding of why human society, as an evolutionary entity, needs the emotion of “love” to tie us together as social units, makes it any more difficult for us to fall in love. We humans have a natural tendency to romanticize certain things as magical, as if beyond understanding. However, we have seen again and again in history, things don’t have to be magical to be fascinating. There was a time, not too long ago, when sunrise and sunset were seen as magical. Today we know with all certainty how it works. But knowing all that, sitting on a sea shore, the sunset looks no less amazing or romantic. In fact, knowing that the sun is one of the billions of stars around us, and the fact there are more stars in the known universe than there are all the grains of sand on earth, makes it even more amazing.

Frank Spencer says

This book has a good combination of information about neuroscience and about art. The author uses three artists who worked around the time of Freud in Vienna to show how our brains process art and how processes outside of our conscious awareness are at work all of the time. He hopes that the new advances in neuroscience will allow more cooperation between those working in several fields to develop a theory of how we respond to art. There are implications for how we help people to cope and manage their reactions to their environments. As a boy growing up on a farm in Vermont in the 1950’s my experience varied from the experience of those born in Vienna in the 1850’s. The descriptions in the book of how processing units in the brain (areas, cell assemblies, chemicals) work together and inhibit one another is very good.

Bob Haar says

Wow. Bought this book after reading it. Very rare for me.

Jeremy says

I’m almost finished with this book and I recommend it. It’s not as good as his previous book, *In Search of Memory*, but how can it be? That was his life’s work. This one is about the scientific and artistic accomplishments of turn of the century Austria, and how they contributed (or relate) to neuroscience developments. Kandel did as good a job as he could linking the two subjects: Austrian history and modern neuroscience. But they are two different subjects. If you like them both, it’s a good read. If you’re interested in learning more about Freud, modernist painting, and how the brain interprets faces and meanings from

what you see, then it's up your alley. If only one of these subjects interest you, then parts of this book may bore you.

Update: the neuroscience in the last chapters is very interesting. This isn't one of those books that just rambles. So I do appreciate that.

Also, the illustrations are supposed to be in color, which doesn't show up on the kindle, being black and white. Not only that, but the kindle illustrations are pathetically low resolution, low quality scans. Seriously, they could do better than that.

Edward says

Preface

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

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