The Tides of Mind: Uncovering the Spectrum of Consciousness

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The holy grail of psychologists and scientists for nearly a century has been to understand and replicate both human thought and the human mind. In fact, it's what attracted the now-legendary computer scientist and AI authority David Gelernter to the discipline in the first place. As a student and young researcher in the 1980s, Gelernter hoped to build a program with a dial marked "focus." At maximum "focus," the program would "think" rationally, formally, reasonably. As the dial was turned down and "focus" diminished, its "mind" would start to wander, and as you dialed even lower, this artificial mind would start to free-associate, eventually ignoring the user completely as it cruised off into the mental adventures we know as sleep.

While the program was a only a partial success, it laid the foundation for *The Tides of Mind*, a groundbreaking new exploration of the human psyche that shows us how the very purpose of the mind changes throughout the day. Indeed, as Gelernter explains, when we are at our most alert, when reasoning and creating new memories is our main mental business, the mind is a computer-like machine that keeps emotion on a short leash and attention on our surroundings. As we gradually tire, however, and descend the "mental spectrum," reasoning comes unglued. Memory ranges more freely, the mind wanders, and daydreams grow more insistent. Self-awareness fades, reflection blinks out, and at last we are completely immersed in our own minds.

With far-reaching implications, Gelernter's landmark "Spectrum of Consciousness" finally helps decode some of the most mysterious wonders of the human mind, such as the numinous light of early childhood, why dreams are so often predictive, and why sadism and masochism underpin some of our greatest artistic achievements. It's a theory that also challenges the very notion of the mind as a machine—and not through empirical studies or "hard science" but by listening to our great poets and novelists, who have proven themselves as humanity's most trusted guides to the subjective mind and inner self.

In the great introspective tradition of Wilhelm Wundt and René Descartes, David Gelernter promises to not only revolutionize our understanding of what it means to be human but also to help answer many of our most fundamental questions about the origins of creativity, thought, and consciousness.

The Tides of Mind: Uncovering the Spectrum of Consciousness Details

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From Reader Review The Tides of Mind: Uncovering the Spectrum of Consciousness for online ebook

Pranjal Sahu says

Very glad to have read this book !

You can take this book as a model of what is called intelligence in common terms. He discusses the mind/intelligence in terms of a spectrum and discusses the role of each part of the spectrum and how they interact with each other. Each part has a role to play. He discusses how a similar model would look like for an AI and what challenges and limitations it can have (although this part is very briefly discussed). The author models our mind in the form of a spectrum with high spectrum dealing with logic (consciousness) and lower spectrum dealing with art (dreams). He argues that in our current studies, a very important part of our mind's functioning i.e. dreams have been neglected. He discusses how dreams are the reflection of the conscious mind and why sometimes the dreams show us the future.

> **Spectrum Law: The mind is in business to make sense. Up-spectrum, it makes sense by making logic. Down-spectrum, it makes sense by creating stories.**

He tries to explain his findings/observations by giving examples from work of prominent writers such as Shakespere, Jane austen, Tosltoy etc. Personally, I find his observations very convincing and the book helped me find answers to some of my own questions such as what is creativity and its source ?

My favorite part of this book is the chapter titled **"Analogies and creative inspiration"** where he discusses creativity and therefore I will write about it more. The author first explains that the purpose of the lower spectrum is to create long term memories and explains the process where our mind while sleeping accumulates, processes, forms connections and develops long-lasting memories. It is this memory creation process during which analogies are formed by abstracting things which is the primary source of creativity. He argues that creativity is nothing but forming analogies and unlike logical problems, there is no fixed procedure/algorithm for creating ideas. Here I would like to give one famous example which somehow author missed in this book, which is about the discovery of the structure of Benzene. As mentioned in Wikipedia-

 "Kekule said that he had discovered the ring shape of the benzene molecule after having a reverie or day-dream of a snake seizing its own tail".

He has given many such examples to demonstrate how the lower spectrum i.e. the part of mind dealing with dreams is behind creativity.

> **Spectrum becomes a metaphor for the most dramatic split between science and art we have ever known.**

He also discusses the role emotions in our mind's functioning. He argues that emotions act as a memory cue. They are a good way of summarizing information and can act as information retrieval keys. He then gives a number of examples where he shows how one emotion leads to some long forgotten experience which can trigger a series of recollections. Technically, emotions are information retrieval keys. I don't know how much the Computer Science community is aware of these concepts but I can easily see the resemblance of current database design to the model of mind author has proposed. A typical Database such as Postgres, processes queries like read/write while in active usage. And to speed up this process, long-lasting connections called indexes are created, when the database load is low which is very similar to the spectrum model author has proposed.

Another interesting chapter of this book is related to body language where he discusses why mind and body are needed to function together. He shows that a mind is a function of the body also and in fact, he says body plays the major role. He then shows how strong communicator our body language is, which I would say is very well known.

Towards the end of this book, he takes examples from child psychology to justify his model.

A very well researched book and highly recommended. I feel very fortunate that this book was referred to me.

Erika says

The author's frequent literary references and plain-as-day enthusiasm on his subject, in my opinion, kept the heavier material (never all that heavy, as it is) entertaining. By the last couple chapters, however, I felt done. The rate of new info to chew on was grinding to a near standstill with pages and pages to go. Still, some fascinating concepts and poetic, even whimsical, interpretation.

Peter O'Kelly says

I've been a David Gelernter fan for many years and was impressed by "The Tides of Mind," but it was a challenging read in some respects.

A few excerpts:

"This book is about that spectrum and a new way to understand the mind. This new way incorporates the findings and observations of many thinkers but rests ultimately on the solid, unspectacular bedrock of common sense."

"The scientist explains the origins of the universe with a logical argument. The religious believer tells a story. (When I say "believer," I mean Jew or Christian—the only religions I know sufficiently to speak of.) Only the logical argument has predictive power. Only the story has normative moral content. Only a fool would pronounce one superior."

"Casual, unconsidered observations are often the most revealing. John von Neumann, the Hungarian Jew

who emigrated to the United States in 1930, is often called the greatest mathematician of the twentieth century. The eminent physicist Eugene Wigner said, "Whenever I talked with von Neumann, I always had the impression that only he was fully awake." The top of the spectrum, after all, is where we find logical (and, a fortiori, mathematical) thinking—and wide-awakeness. A first-rate mathematical genius soars higher in his logical thought than nearly anyone else. In the spectral (or ultraspectral) region of "exceptional logical capacity," our model predicts that von Neumann would also, simultaneously, be in the region of "exceptional wide-awakeness." This is a fine prediction, but what does it mean? Can a person be wider than wide-awake? Wigner tells us yes. That was exactly von Neumann."

"Our conscious thought when we dream, as when we are awake, is a rational attempt to make sense of reality. But what is reality? When we sleep, the inner field of consciousness is reality—and presents us with a series of recollections that probably make no sense as a sequence and might each be damaged or distorted. (Damaged or distorted because of the state of our sleeping brains, or the tendency of memory—out of control—to present several recollections superimposed.) In short, it's not that our thoughts are irrational and bizarre when we dream. Reality is irrational and bizarre! Making sense of this reality is a stiff assignment, but we do our best. We do it by inventing theme-circle narratives—because at the spectrum's bottom, that is our technique for making sense of the world."

"The philosopher Georges Rey is right in saying that "there is every reason to think that human beings are not ideally designed, but are a hodgepodge of some very arbitrary evolutionary accidents." Fair enough. Anyone can think of aspects of the human creature he would love to see improved. (Immediately.) But at the same time, Rey and many other mainstream mind thinkers give us the feeling that they don't quite see the beauty of the mind we have. It is buggy and fragile, and subject to grotesque abuse (as any investigation into good and evil or into freewill reveals). It is delicate, absurdly sensitive—a far more sophisticated design than really made sense under the circumstances. It was a splurge that has gone wrong in the field again and again, in a million ways. Still: how beautiful."

Zheluo Cai says

The Tides Of Mind is an inter-disciplinary approach to understanding human consciousness with David Gelernter taking us on a guided exploration through the mysterious origins and inner journeys of thought, consciousness and creativity within the human mind. It draws on Gelernter's diverse background in neurophysiology, molecular biology and artificial intelligence, apart from his wide knowledge of philosophy and literature. He invariably and skillfully brings together varied illustrations from an extensive collection of literary works to inform us how great poets and novelists had deftly understood the workings of a subjective mind and the inner self. The Book is an invigorating presentation fathoming childhood thoughts if we are allowed to presume it exists in whatever form, to adult musings and dreams, within a spectrum framework delineating levels of memory and thought as he uncovers the beauty of the human mind.

Steven says

Important Call for Rethinking the Workings of the Mind

This builds on Freud by carefully breaking down the structure, functions and interaction of thought, memory and emotion. It is an important work by one of our most gifted thinkers. Gelernter underestimates the

developing power and potential of computing in my estimation, but focuses the reader on the awesome and beautiful powers of the mind, on how deeply far away science is from adequately exploring creativity, memory and emotion and on the benefits of personally reflecting on one's non-analytical self.

Yogodot says

Disappointing. I was ready for a revolutionary new way of conceptualizing consciousness, but I kept waiting for it, chapter after chapter. Gelernter admits that his themes are mostly common sense; his literary quotes and metaphors reflect his apparent faith in folk psychology as the true view of consciousness. He's telling us what we already know. He delivers such breakthrough revelations as "two memories can evoke similar feelings." Ready to resurrect Freud again?? Don't waste my time.

D.R. Oestreicher says

Don't be confused: not brain science. The Tides of Time: uncovering the spectrum of consciousness by computer scientist David Gelertner (61) unfortunately reminded me of How to Live Longer and Feel Better by Linus Pauling and many popular business books. Linus Pauling because his training and fame (Nobel Prize Chemistry 1954) gave him a platform to expound far and wide, beyond to realms of science, sometimes with success (Nobel Peace Prize 1962) and others without (vitamin C advocacy).

And business books? When I was in business school, I was advised that be proper way to read popular business books was introduction, first and last chapter. Scanning what came between was suggested to be optional.

If you are interested in theories of mind and consciousness, and don't mind theories based on introspection and novels, this could be the book for you. In a century where so many are doing hard observational science on this topic, I found this book to be oddly old fashion in the style of the brilliant Freud whom the author takes as one of his inspirations.

For more see: http://1book42day.blogspot.com/2016/0...

David Kessler says

The spectrum, three of them, go into depth of how our brain functions. I found the book particularly dry and full of references to past writers(Shakespeare, etal) which to some readers would have been interesting. I read it looking for some explanation of consciousness(awake/not awake) but the particular research in that arena was not spoken to. The author has carved out his own explanation of brain organization and does so through his writing with sober thinking and rationality. Got only a few tidbits from this book.

Paul Peterson says

This author's father was one of the creators of the Artificial Intelligence field and he's been studying the mind his entire life. He says computers cannot replace the human mind and tells why. Also reinforces my belief that most scientists believe in God, contrary to popular culture's twist on reality.

"Shakespeare's "Winter's Tale" (and a million other witnesses) remind us that winter, as well as evening, makes us look inside, to the inner field of consciousness and the storytelling end of the spectrum".

"I think that, in truth, nearly all of us do believe in God, although we don't realize it ourselves. The idea of God shocks and horrifies us. The original, most basic repressed idea of the modern psyche is our belief in God. The fact that we do believe proves nothing, except how much mind fashions change, and how much they matter."

"To learn how to communicate with their fellow human beings, young people must turn off Facebook, shut down their computers, and look people in the eye, listen to their voices, watch their gestures. They must look for subtleties and ponder their meanings. They must learn to read, not words (which are easy) but people - and that requires a whole childhood and adolescence to learn."

"Modern-day relations between science and religion are all wrong. "Science" has no more right to pontificate about religion than it does about field hockey of dog shows. Science does not have an unmatched record of producing useful tools. It should produce intellectual tools for the use of religious thinkers as it does for so many other fields, deliver them, and keep its adolescent wisecracks to itself."

Edward says

I found this to be a fascinating book about how the mind works. Gelernter is a computer scientist who questions the idea that computer programming can at some point replicate the workings of the human mind. It may come close in abstract, logical thinking, but Gelernter contends that there are many functions of the mind that are completely inaccessible to such an approach.

His book is speculative but given his background, it seems rooted in strong possibility He sees the mind as a spectrum, ranging from the self-consciously logical and rational thinking that we do when we are fully awake and engaged in cognitive tasks, to the unconscious realm of sleep where dream images take place. During any twenty-hour period the mind cycles from one end of the spectrum to the other. The unconscious part of our mind creates a non-verbal picture language which makes no sense to the rational mind. That explains why our dreams often seem so illogical and weird. Where do these images come from?

It's Gelernter's contention that all dreams are based on memory of past events and express themselves as emotions which throw up images. Not always, but very often, they refer to events in the past that trouble us in some way so they are suppressed by the conscious mind, and that's why dreams are usually forgotten. If forgotten, past events that disturb us, no longer exist and if something ceases to exist, the conscious mind can ignore it. It's a survival technique; if we spent our waking hours churning through all of our frustrations and disappointments, we'd be incapable of getting anything done.

He writes, "The role of emotion in thought, our use of memory, the nature of understanding, the quality of

consciousness - all change continuously throughout the day as we sweep down a spectrum that is crucial to nearly everything about the mind and thought and consciousness" If this emphasis on emotion, whether we are aware of it or not (and usually we aren't, or downplay it) is right, then the notion of a computer capturing emotion is absurd - there is no need for it in computational manipulations

If this sounds like Freud, it's no accident. Gelernter sees value in many t of Freud's insights, as well as collaboration of his theories in all kinds of literature, from the Hebrew Bible to Shakespeare to more modern authors such as Jane Austen, the Romantic authors such Wordsworth, Coleridge Keats, Dostoevsky, Tolstoy, Proust, and many other 20th century authors. He quotes freely from them where their imagery suggests the influence of the lower spectrums.

This attempt to understand the inner mind is always limited because our conscious mind, despite our best efforts, censors the incredibly vast areas of our experience. Only a small amount of our memory is used for practical purposes, the rest can be forgotten and forgotten. And yet the bulk of our experiences are still there, and make themselves known through our dreams

Why? Because any part of our experiences, especially ones of frustration, fright, surprise, anything that ignites our emotions, no matter how small, will come out in dream images, and nearly all of that will be forgotten in the daylight of consciousness This theory gives new meaning to the idea that we will never know ourselves, we will forever remain a immense unexplored continent.

Gelernter puts it this way, "If this yearning to revisit the past were permanently unsatisfied, and there were no hope of anything different our lives might always have that bitter, cynical edge they take on temporarily when some hope has collapsed or some project gone wrong So we do revisit the past on the sly, in secret - a secret we keep from ourselves." We need the lower spectrum to do this for us.

There is much more in the book, of course, in particular a detailed discussion of how children are closer to the lower end of the spectrum most of the time, and as they learn and mature, more of their time is occupied with the upper more logical end.

All of this could be called depth psychology, and Gelernter agrees, finding it a good thing, not to view the mind medically as a sick organ in need of a "cure" as Freud largely did, but to see the mind as an complex and beautiful thing. After reading the book it occurs to me that the mind developed complex survival skills to insure our survival.

Matt Hale says

Interesting concepts and thought provoking, but not always accurate in my personal experience. I was hoping to see more about how they might apply to artificial intelligence, which is his original field.

Chase Matthews says

Easily the worst book I've ever read. If you love neuroscience then you shouldn't touch this book with a 10 foot pole. 200 literary citations and almost no empirical evidence to back up any of the author's claims.

Throw in some anti-science sentiments and a secret religious agenda added in at the end of the book, I can almost guarantee anyone capable of critical thought will walk away feeling offended. The copy I bought now lives in a trash can so hopefully no one else can be afflicted by it.

Alan says

I was going to give this a two-star rating, but the concept is just too interesting. Rambled quite a bit, and about 99% of his references were from classical literature, as opposed to empirical scientific literature. Could have been about 100 pages to the same effect.

Gafgo says

I like it but I do not love it.
I don't feel like I had an earth-shattering insight while reading and the first third was a bit tough for me personally to get through but after that it took me just one or two days to finish. It felt a bit repetitive here and there but I thoroughly enjoyed his style of writing (have to say that I read the german translation, but I think it should be roughly the same in english).

Peter Mcloughlin says

This book on psychology is interesting the way Freud and Jung can be interesting. It is a psychological theory about a spectrum of consciousness going from high spectrum with hard rational thinking of the kind you do on a math problem to lower levels on the spectrum which are more imaginative and lyrical final at the lower levels enter the dreamscape of sleep. It is fun to read the collective unconscious of Jung or the pleasure principle of Freud are interesting to read. Is there any data to back up this theory not exactly. Reminds me a little too much of literary criticism.