

Unconscious Meaning

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..... This time I look at a short work that contains a large number of surprising ideas.

A User's Guide to Thought and Meaning by Ray Jackendoff (Oxford, 2012, 288 pp. ISBN 978-0-19-969320-7, \$29.95)

According to Steven Pinker's blurb on the dust jacket, "Ray Jackendoff is a monumental scholar in linguistics who, more than any other scholar alive today, has shown how language can serve as a window into human nature. Combining theoretical depth with a love of revealing detail, Ray Jackendoff illuminates human reason and consciousness in startling and insightful ways." Jackendoff is the author of many books on linguistics and cognition, but in this one he presents an overview of some key concepts to a broad audience. He says that as a traditional scholarly treatise it would be a thousand pages long—if he ever finished it. The usual downside of presenting lots of ideas in a short space is that a book can become, like Marshall McLuhan's *Understanding Media* (McGraw-Hill, 1964), too dense for ordinary humans to grasp. But down-to-earth examples, simple diagrams, and a few cartoons—which provide the revealing detail Pinker refers to—make this book a pleasure to read.

Cognitive perspective

The heart of Jackendoff's argument is that thought and meaning are almost

completely unconscious; we are aware of pronunciations, sentences, visual surfaces, and a small set of inklings that arise from unconscious processes. The inklings, called "character tags," give us the feeling, for example, that a certain sound or visual surface is meaningful, significant, good, or taboo, based on sensory input, and so forth. If you say "thit," I'm aware that you said something meaningless, but the mental processes that produce that awareness are as unavailable as those that tell me when to breathe. It's hard to explain what happens in your head when I say, "Osculating means doing this."

Jackendoff presents dozens of small examples that refute many widely held ideas and lead him to conclude that meaning is unconscious. Reading them is enlightening and delightful. They often contrast the ordinary perspective—the one we're all born with—which is natural, but can lead to paradoxes (there's no such thing as sunsets), with the cognitive perspective, which always asks, "How does the brain do that?" For example, "John slept until the bell rang" entails a single sleep, while "John jumped until the bell rang" entails potentially many jumps. Nothing in the actual sentences conveys the difference in meaning. We can use words after the fact to explain the difference, but the difference is immediately apparent without that step. Whether the jumping is a one-time event or a repeated activity is an aspect of the unconscious meanings that the sentences don't express.

This book is about software in the sense that Jackendoff is concerned with how the brain provides the experiences of language, thought, and meaning that we are all familiar with. From the ordinary perspective we have no trouble understanding that "the bear chased the lion" and "the lion was chased by the bear" mean the same thing. From the cognitive perspective, we know that this understanding arises from brain activity. But just as we don't look at digital signals to figure out how a computer executes an algorithm written in Java, Jackendoff doesn't try to explain this phenomenon by looking at neural and chemical activity. He focuses on data structures, information flow, and the states of character tags.

Many people have tried to explain consciousness (for example, see the Mar./Apr. 1992 Micro Review column, where I review Daniel Dennett's *Consciousness Explained*). Jackendoff reviews some of the more popular theories and challenges them to explain the observed phenomena. He believes that whatever consciousness is, it enables us to perform certain kinds of language-based reasoning, but it gives us limited access to the most important and powerful brain activities that support the way we attach meaning to events in the world. Sentences like "the bear chased the lion" and "the lion was chased by the bear" are different handles for closely linked entries in unconscious data structures. Those structures contain information about lions, bears,

chasing, and English grammar. They provide the means by which we can recognize “the wargon chased the olifump” as likely to be an instance of the same sort of activity, even though we don’t recognize the words “wargon” or “olifump.” The structures also define the conceptual relationships that show types and characteristics: bears are animals, mammals, predators, intelligent creatures, four-legged, and so forth. They exhibit mother/child relationships similar to but different from those of lions or humans. If we see a bear, we know it’s a bear even if we have never seen that particular bear before.

Jackendoff, unlike his mentor Noam Chomsky, thinks communication is why language developed, with rational thinking as a side benefit. Rational thinking is important, but it isn’t what most of us think it is. As Lewis Carroll pointed out in “What the Tortoise Said to Achilles,” every syllogism relies on a hidden syllogism in an infinite regress. When we say, “All humans are mortal; Socrates is human; therefore, Socrates is mortal,” we have a hidden syllogism that lets us reason that this is of the form “All A are B; C is an A; therefore C is B,” and that if we can line up humans, mortal, and Socrates with A, B, and C, then the statement about Socrates is true. Ultimately, we rely on an unconsciously generated character tag to tell us whether the reasoning is correct.

In *Thinking, Fast and Slow* (Farrar, Straus, and Giroux, 2011), Daniel Kahneman popularizes System 1, the fast, intuitive mode of thought, and System 2, the slow, rational mode of thought. Jackendoff says these correspond to his ideas of unconscious and conscious thought and that they are not separate. System 2 rides on top of System 1 and uses its capabilities. If I encounter a bear with its cubs in the woods, System 1 tells me to head immediately in another direction, while System 2 helps me reason about what the bear might do. System 2 is thought that is linked to a cognitive correlate of consciousness—namely, a data

structure that corresponds to our subjective experience of hearing language in our heads—and provides a handle for the unconscious thought.

Images, smell, taste, touch, and even the sense of where we are in the world (proprioception) provide additional handles to unconscious meanings and structures. Blind children, led along two walls of a room to an opposite corner, have no trouble returning along the diagonal to their starting point. This shows that we have unconscious spatial maps that are distinct from visual images.

Jackendoff speculates on the structures that support unconscious thinking. In addition to meanings linked into conceptual structures and spatial maps, every entity that we deal with in the long or short term has a reference file, which holds everything we know about it. The reference file for the mama bear lets us keep her in mind while we ponder other facts that may be helpful. Rational (conscious) thinking enables us to create reference files for thoughts, so we can manipulate and explore them without losing track of them.

Character tags—of which Jackendoff postulates fewer than a dozen—play an important role in his model. They explain how we perceive the world as “out there” and how we distinguish actual perception from mental images or dreams. He postulates a character tag that gives us a sense of whether the visual surface in our head arises from our minds or from sensory input. This character tag is often ineffective during dreaming, and it sometimes gives schizophrenics the wrong message. Another character tag provides a sense of whether we are in control of ongoing events. This forms the basis of our sense of free will.

Implications

Jackendoff’s model of unconscious structures and character tags does more than simply explain the relationships between language, thought, and meaning. It provides a coherent explanation of how we understand and

experience the world. For example, from the ordinary perspective, we ask, “What is truth?” Jackendoff answers by showing that question to be hard to answer. He shows pictures of men of varying degrees of baldness, looks at the one in the middle and asks, “Is Ed bald?” He prefers the cognitive perspective, which asks, “What does the brain do when it judges a statement to be true?” This leads to the conclusion that judging truth largely happens unconsciously, and that the well-known phenomena of confirmation bias and denial play a part.

The fact that meaning is unconscious and that System 1 thinking is fast and pretty accurate does not mean that rational thinking is useless. In fact, rational thinking is a large part of what distinguishes humans from other animals. Language, which characterizes System 2 thinking, enables us to give thoughts reference files of their own, to describe and manipulate the information provided by character tags, and to engage in hypothetical reasoning. We can transform the results of intuitive reasoning into explicit steps and challenge each one. The famous example is the bat and ball that cost a total of \$1.10, with the bat costing a dollar more than the ball. Intuitive reasoning immediately says that the ball costs ten cents, but rational thinking, plodding along methodically, arrives at the correct answer.

All of this has implications for teaching, learning, or becoming an art or science virtuoso. Jackendoff, an accomplished concert clarinetist, illustrates this by telling how his chamber group spent 15 minutes deciding how to play the first six seconds of Brahms’s Clarinet Quintet. From this he extrapolates into how to integrate rational and intuitive thinking in music, theater, sports, art, writing, and every other skilled activity—even reasoning itself. The goal is always “flow”—that state in which it all goes so well we surprise ourselves.

Jackendoff tries to show that the arts matter as much as science. I believe that

he is correct, but it's a hard argument to make. Rational thinking, because it is based on language, conceals aspects of thought that language cannot express. Science resonates with the rational while the arts resonate with the intuitive. Science looks for ever-broader generalizations that minimize the surface of appearances. Artistic appreciation seeks intricate and subtle details and patterns. It reveals the character of the surface—not what is said, but

how. Because System 2 rides on System 1, you can't have rationality without the underlying intuition, and the better you train the intuition, the better the rationality will be. As I said, it's a hard argument to make.

The book is a deceptively easy read. I got through it once and realized that I had missed many key points. I had to start over and take careful notes. The book is densely packed with insights

and ideas, which are well worth the effort of grasping them. MICRO

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