

## Kekulé's Dream

How do we attain knowledge? By what means? Such questions address one aspect of epistemological inquiry: the sources of knowledge.

The most obvious source is sense experience. How do you know that a book is in front of you? Because you can see and feel it. But sense experience is not our only source of knowledge. If someone asked you, "How do you know that if  $x$  is greater than  $y$  and  $y$  is greater than  $z$ , that  $x$  is greater than  $z$ ?" What would you say? You don't see or feel anything, but your reasoning tells you that the relation is true. Reasoning is another source of knowledge.

But sometimes we clearly get knowledge by experiences not easily defined. "I had a flash of intuition," we say, or "My intuition tells me it is so" or "All of a sudden, in a flash of intuition, I saw things clearly." It's very difficult to define *intuition*, perhaps impossible. Nevertheless, the term does label certain kinds of experience characterized by a conviction of certainty that comes upon us quite suddenly.

Take, for example, a most famous scientific discovery. Friedrich Kekulé, professor of chemistry in Ghent, Belgium, discovered that carbon compounds can form rings. Kekulé's discovery did not come easily. For some time he'd been pondering the structure of benzene, but he couldn't explain it. Then, one afternoon in 1865, he turned his mind away from his work:

*I turned my chair to the fire and dozed. Again the atoms were gamboling before my eyes. This time the smaller groups kept modestly in the background. My*

*mental eye, rendered more acute by repeated visions of this kind, could now distinguish larger structures, of manifold conformations; long rows, sometimes more closely fitted together; all twining and twisting in a snakelike motion. But look! What was that? One of the snakes had seized hold of its own tail, and the form whirled mockingly before my eyes. As if by a flash of lightning I awoke and this time also I spent the rest of the night working out the consequences of the hypothesis.*

Kekulé had found his clue to the structure of benzene in his dream of the snake gripping its own tail.

### QUESTIONS

1. What preceded Kekulé's discovery via the creative subconscious?
2. Does this narrative tell you anything about how intuition can lead to knowledge?
3. Before Kekulé accepted the validity of his intuitive insight, he subjected it to rigorous testing. Does this suggest anything about how intuitive claims should be handled?
4. How would you distinguish between intuitive claims such as Kekulé's and others such as "My intuition tells me it'll rain tomorrow"?

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Source: Quoted in Gardner Lindzey, Calvin Hall, and Richard F. Thompson, *Psychology* (New York: Worth, 1975), 320.