

tems) the ability to protect their claims and control demonic males, society becomes more tolerable. Less exciting, perhaps, but more tolerable.

—James Q. Wilson

WHERE DOES THE WEIRDNESS GO?

Why Quantum Mechanics Is Strange, But not as Strange as You Think.

By David Lindley. Basic Books. 251 pp. \$24

Quantum mechanics is the branch of physics that considers the structure and behavior of the fundamental, unobserved components (atoms, electrons, photons) of the visible world. Given that some world-class physicists have found it difficult to understand and accept the principles of quantum mechanics (Einstein himself was a doubter), it's not surprising that the theories should puzzle the layperson. What is surprising is that a scientist should undertake to explain quantum mechanics to the general reader, and that he should succeed as well as David Lindley has in this compact, patiently argued volume. A certain unease lingers with the reader at the close of the book, but that is nature's fault, not Lindley's.

If a layperson knows anything about quantum mechanics, it is likely to be some variant of the principle that "measurement affects the thing measured." Alas, even that knowledge is flawed, for the statement is misleading. It implies that a quantum object—"the thing measured"—has a definite but unknown state, which is disturbed and altered

by the act of measurement. A more accurate formulation is that measurement itself gives definition to quantities that were previously indefinite. That is, a quantity has no meaning until it is measured. The primal state is indeterminism.

Hence the "weirdness" whose disappearance Lindley traces. The word refers to the ambiguous behavior of the particles that are the basis of everything in our workaday physical world (the world of classical physics). How, Lindley asks, does the unobservable, unstable subatomic world (where particles may be waves, and waves, particles, and photons seem to be in two places at once) provide the basis for a physical world susceptible to measurement and routinely exhibiting the stability lacking in its minutest components? Is there a boundary separating one world from another, across which the transformation occurs?

Yes and no. Or, fittingly, no and yes. Lindley insists on only as much certainty as the topic will bear. Quantum mechanics provides mathematical explanations for how the subatomic world works. But despite their validity, these mathematically unambiguous explanations leave us some distance short of understanding. Why? Because they cannot be made to assume shapes that we recognize from our experience of the workaday world. The reality they describe seems so ghostly and elusive that we wonder finally whether it has any claims on our attention. Lindley's accomplishment is to persuade us that it does—while at the same time reassuring us that nature as we know it is not thereby undermined.

—James Morris

Arts & Letters

LIFE OF A POET:

Rainer Maria Rilke.

By Ralph Freedman. Farrar, Straus & Giroux. 640 pp. \$35

Rainer Maria Rilke (1875–1926) is that rare oxymoron, a popular poet. Not in the academy, where young Germanists stake their careers in trendier soil, but among the ragged ranks of the reading public, Rilke is one of the most beloved poets of the 20th century. Born in Prague of a German-speaking family, he rejected the military and busi-

ness career that was expected of him and, after a brief marriage to the sculptor Clara Westhoff, became a wandering artist, cultivating friends and admirers all over Europe. In the modernist age he began as a romantic, evolving over time into a visionary poet who revolutionized the German language.

One might quibble with the emphasis, or lack thereof, given certain minor works and figures in this biography. But Freedman, emeritus professor of comparative literature at Princeton University, manages to distill