with their predecessors' insights. These innovators may prize the forms of older bridges, but they never read the fine print involved in their creation. Accordingly, Petroski suggests that we may be due for another debacle by the end of this century, as today's engineering elite keeps building ever-longer versions of cable-stayed bridges.

Despite its technical depth, this book is not just for admirers and protectors of our great bridges. It is also for men and women in every profession. By linking the widely publicized needs of the "physical infrastructure"—the ravages of neglect and deferred maintenance—with the more subtle but equally urgent demands of the "engineering-design infrastructure," Petroski shows how "neglected patterns from the past become unconscious patterns for the future." To engineers, the message is that they are "reinventing, albeit with faster and more powerful tools, the bridges of the past and of different cultures." To the general reader, it is that technological sophistication can promote a fatal illusion of discontinuity with the past. The profound contribution of *Engineers of Dreams* is to remind us that communication across generations may be the most important bridge of all.

—*Edward Tenner*

THE SAME AND NOT THE SAME.
By Roald Hoffmann. Columbia
Univ. Press. 294 pp. $34.95

Goethe modeled his novel *Elective Affinities* (1809) on a theory about the spiritual origins of chemistry. In a similar vein, Hoffmann—chemist, poet, and Nobel laureate—wishes to show how the activities of molecules "parallel deep avenues in our psyche."

The book's allure is based on metaphor, as Hoffmann draws a parallel between the oppositional properties of molecules and the dualities of human relationships: bonding and separation, continuity and change, the natural and the unnatural. Playfully, he explores the fact that some molecules are mirror images of one another, "the same and not the same," like the molecules creating the smells of spearmint and caraway. More ominously, the disastrous sedative thalidomide is deceptively similar to two other successful compounds.

Hoffmann's evident ambition is to make a case for chemistry to supplant physics as the philosophical model for all the sciences. His arguments are that chemistry is creative as well as analytic, and that, compared with physics, chemistry deals more interestingly with conflict and ambiguity.

Evident also is the author's hope that his book will do for chemistry what Stephen Hawking's wildly successful *Brief History of Time* did for astronomy. But Hawking's book, for all its difficulties, has a clear narrative line leading from the early development of astronomy to its later achievements and ultimate speculations.

Hoffmann's book, by contrast, mixes lucid explication with a great many fragmentary jottings that lead nowhere. Such open-endedness may be helpful when examining molecules, but in writing it defeats coherence.

—*Susan Ginsburg*

LIFE ON THE SCREEN:
Identity in the Age of the Internet.
By Sherry Turkle. Simon & Schuster.
347 pp. $25

The wonders of cyberspace have made a believer of Turkle, a social scientist at MIT and a practicing psychotherapist. Yet despite her affinity for the net-surfing world view, she has lost neither her "real-life bias" nor her ability to communicate with those too uninformed, or skeptical, to take life at interface value.

In nontechnical language, she describes how the Internet has transformed the computer screen into a gateway, a beckoning path to virtual worlds in which people may play at identity, freely altering their personality, status, vocation, and sex.

For Turkle, the promise of such "Internet experiences" is that they can "help us to develop models of psychological well-being." "Like the anthropologist returning home from a foreign culture," she writes, "the voyager in virtuality can return home to a real world better equipped to understand its artifices."

Yet Turkle also describes the danger: that the boundary between real life and simulation will be blurred or erased. Her book is a Baedeker less to the bizarre electronic landscapes of cyberspace than to the minds of those who wander through them. As such, it is instructive, amusing, and chilling.

—*James Morris*