

sanity and madness. In the face of his close and scholarly microanalyses, he never loses sight of the broad humanistic nature of the literary engagement with psychological suffering. Lucid and readable throughout, his style is refreshingly free from literary-critical jargon.

Readers in the history of science and medicine may also have a few regrets about Thiher's book. First, it reveals several glaring historiographical gaps (e.g., no citation of the publications of Otto Marx, George Mora, Henri Ellenberger, or Werner and Annemarie Leibbrand in the chapter on German Romantic medicine). Second, reflecting a preoccupation of literary criticism today, Thiher adopts a thoroughly linguistic model of reality: madness is essentially a textual trope characterized by "a fall from language," a characterization that a good many clinicians and historians—to say nothing of psychiatric sufferers—may find sterile and intellectualistic. Third, Thiher's book consists of a chronological presentation of a long sequence of writings in which each work is given its requisite paragraphs. With all linear intellectual-historical presentations, however, the danger looms of digressing into a kind of catalogue. For this reason, the most brilliant explorations of the shared terrains of literature and medicine in the past decade have in my judgment been works that concentrated in great descriptive and analytical depth on a single chronological period, works such as Louis A. Sass's *Madness and Modernism: Insanity in the Light of Modern Art, Literature, and Thought* (Basic, 1992) and Juan Rigoli's *Lire le délire: Aliénisme et littérature en France au XIXe siècle* (Fayard, 2001).

Nonetheless, *Revels in Madness* is an admirable and highly successful conspectus and the first single-authored synthetic study of its kind in a generation.

MARK S. MICALE

Peter Pesic. *Seeing Double: Shared Identities in Physics, Philosophy, and Literature.* 184 pp., illus., notes, index. Cambridge, Mass.: MIT Press, 2002. \$24.95 (cloth).

Peter Pesic has written a very entertaining short book that interweaves the historical development of philosophical, literary, and scientific notions of individuality, identity, and indistinguishability. From the perspective of a historian of science, the book seamlessly combines an accurate and well-referenced history of atomic theories of matter with literary and philosophical accounts of identity. This makes the history all the more entertaining and informative, not to mention

philosophically well grounded. From the perspective of a philosopher of science, while the discussion is kept at a popular level (as Pesic himself warns), the author provides excellent references for readers wishing to delve deeper into the contemporary philosophical debate.

Pesic begins his narrative by identifying two basic notions of individuality in Homer: individuality as an exchangeable commodity (individuals ultimately possess no "primitive thisness" by means of which they may, in principle, be distinguished) and individuality as a sacrament (individuals ultimately can be distinguished by means of a "primitive thisness" knowable only to the gods). These notions are then traced through the philosophical literature in debates between Greek atomists and Aristotelians and the development of atomic and corpuscular theories of matter from the Stoics to Descartes and Newton. Notions of identity and individuality are discussed in the philosophical contexts of Locke and Leibniz and in the literary contexts of the case of Martin Guerre (a sixteenth-century case of mistaken identity) and the works of Dostoyevsky and Conrad. Pesic then discusses the further development of atomic theories of matter, culminating in the distinguishability he finds inherent in the ontologies of Newtonian particle dynamics and statistical mechanics. The next stage of the story involves the development of classical field theories from Newton to Maxwell. Here Pesic observes that wave identity is different from classical particle identity as manifest in the phenomena of interference, a point that becomes crucial to his subsequent discussion of the development of quantum mechanics. Central to this discussion is his claim that the simplest explanation of quantum interference phenomena is in terms of an ontology of nonindividuals, objects possessing what he refers to as "identity." The book ends with a brief discussion of the development of quantum field theory and the role "identity" plays in it.

From a philosophical perspective, the central claim of the book is that positing identity for quantum particles is simpler than positing an in-principle unobservable classical "primitive thisness." One can argue with this claim. One might maintain that quantum particles are individuals (each possessing a "primitive thisness" that metaphysically distinguishes one from another) and that they do not in all circumstances possess determinate properties (in particular, determinate positions). One might in addition argue that property indeterminateness can ultimately be associated with the structure of the phase space of a quantum system in comparison with that of a

classical system. Technically, the latter forms a Boolean algebra, whereas the former forms a non-Boolean lattice. In both cases, the notion of an individual can be interpreted as remaining the same. Hence, in one respect, such a “property indeterminateness” thesis is more simple than Pesic’s “identity” thesis in that it remains closer to classical notions of individuality.

Notions of simplicity aside, Pesic’s discussion is penetrating and provocative. (Elsewhere, he has demonstrated that the Hilbert space formalism of nonrelativistic quantum mechanics can be derived from a set of postulates that can charitably be interpreted as stipulating “identity” for quantum particles.) The topics of individuality and indistinguishability are at the heart of much debate in the philosophy of physics. (Indeed, Pesic’s discussion could be extended to the field of spacetime physics, where the ontological status of spacetime points plays a central role in debates stemming from Newton and Leibniz and extending to current theories of quantum gravity.) Pesic has provided a well-rounded historical introduction to the subject.

JONATHAN BAIN

Jelle Z. de Boer; Donald T. Sanders. *Volcanoes in Human History: The Far-Reaching Effects of Major Eruptions*. 320 pp., tables, illus., maps. Princeton, N.J.: Princeton University Press, 2001. \$29.92, £19.95 (cloth).

Does the world need another book about volcanic eruptions and the havoc they wreak? The answer, for this book, is an emphatic “yes,” especially for the general reader. At first glance it might seem to cover much of the same ground as Alwyn Scarth’s *Vulcan’s Fury: Man against the Volcano* (Yale, 1999). Indeed—and not surprisingly—both books discuss some of the same eruptive episodes, those of Vesuvius in A.D. 79, Iceland (various years), Krakatua in 1883, Mont Pelée in 1902, and Mount St. Helens in 1980. However, *Volcanoes in Human History* presents four episodes not discussed in the earlier book, and there is in general more on the geological background and on the biological, climatological, and ecological consequences of the eruptions. While there are naturally some shared references, this book tends to have more secondary rather than primary references and relies more on sources written in English.

The strengths appear quickly in a first chapter that introduces terms for volcanic products and provides an introduction to plate tectonics, its relation to volcanism, and the settings where volcanoes occur. Each chapter includes a clear di-

agram of the tectonic setting and a detailed map of the volcano in question, showing the volcanic center and the location of flows and slides. Discussion of the tectonic settings is detailed and enables the reader to gain a feel for the dynamics of the region. There is more technical information in this book than in Scarth’s volume, including geochemical and geophysical data where appropriate.

As examples of more and less familiar eruptions, Jelle de Boer and Donald Sanders chose Krakatua (1883) and Tambora (1815). Both were in Indonesia (where Boer grew up) and influenced climate conditions around the world. The eruption of Tambora, although more violent and emitting a much larger volume of material, occurred at a time when global communications were far less developed than when Krakatua burst forth and thus has remained less known. The authors provide a capsule history of the islands of Indonesia and of their governance and economy at the times of the eruptions. For both eruptions the immediate and long-term geological, sociological, biological, and economic effects are traced. There was tremendous loss of life from the eruptions and associated tsunamis. There were worldwide effects as well: climate and rainfall disruptions that led to failed harvests and the epidemic spread of cholera and other diseases in weakened populations. Political bodies were destabilized by famine. Similar results are discussed for the other eruptions.

The authors have sometimes included folklore, legends, poetry, and prose inspired by the volcanic paroxysms. There is a glossary of terms. The method of handling references will be cumbersome to those accustomed to science style, although the intent is probably to be reader-friendly and not interrupt the text more than necessary. At the end of the book, for each chapter, there are sections for the relatively few endnotes, a list of references cited, and a list of related readings. While this system works within each chapter, it is tedious to discover whether a particular source is cited—a situation exacerbated by the noninclusion of authors in the index, which is reserved for those mentioned in the body of the text. Nonetheless, besides being interesting to read, *Volcanoes in Human History* clearly demonstrates that volcanism, and geology as a whole, should not be of concern only to geologists and that history is important.

SALLY NEWCOMB

Alan W. Hirshfeld. *Parallax: The Race to Measure the Cosmos*. xviii + 314 pp., illus., figs.,