asserting her authority. The historical persistence of this laissez-faire attitude toward the child is illustrated by Lewis's astonishment at the "noise and chaos level of Japanese nursery schools" (p. 196). As Lewis notes, however, such classrooms are not unregulated; rather, the teacher delegates authority to the children themselves and designs her teaching to generate the spirit of group cooperation. Interpersonal harmony, "knowing one's role" (Kojima), and "role perfectionism" (Befu) are equally stressed in Japanese society. These polar views of the child as autonomous and disciplined are reconciled in the cultural emphasis, noted by many contributors, upon "effort" as responsible for accomplishments. White and LeVine find in the common vocabulary defining a good child (for example, *sunao*) a convergence of the child's self-development with the social requirement of cooperation.

Some contributions do not fit the picture outlined above, but deserve mention. Two linguistic papers (Kuno; Hakuta and Bloom) suggest possible foci of investigation for the child's language acquisition. Some of the structural characteristics of the Japanese language emphasize the speaker's empathic relationship with the listener and the person spoken about, thus throwing sidelight upon the Japanese self-concept.

Hatano and Inagaki discuss "two courses of expertise": the adaptive skill involving understanding and adaptability to novel situations, and the routine skill oriented toward efficiency within the familiar repertoire. The authors refrain from characterizing *Japanese* child development, but there are hints that Japan's school education fosters routine skill as exemplified by rote learning. Japanese education is characterized in other papers as biased for processual accuracy at the expense of conceptual grasp. Whether this bias impedes creativity and thus should be regarded as a huge price that Japan is paying in the long run for its short-run success remains unanswered.

The diversity of the papers may frustrate those looking for a coherent thesis; the editors leave the making of connections to the reader. Because of its variety, the collection will appeal to professionals and nonprofessionals, Japan specialists and nonspecialists. Those troubled by the problems of American education will gain new insight, if not solutions, from the cross-cultural material cogently presented. For those interested in further study, the concluding chapter by De Vos and Suarez-Orozco provides pertinent guidelines.

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Continental Geophysics

The Continental Crust. A Geophysical Approach. ROLF MEISSNER. Academic Press, Orlando, FL, 1986. x, 426 pp., illus. $70; paper, $34.95. International Geophysics Series, vol. 34.

Geophysical studies of the continental crust have advanced rapidly in the past decade. This growth followed a preoccupation with the oceanic crust that accompanied the plate tectonics revolution in earth sciences. The period of emphasis on continental studies has been marked by progress in deep seismic reflection and refraction/wide-angle studies, magnetotelluric investigations of deep earth conductivity, potential field investigations of gravity and magnetics, improved laboratory measurements of earth materials, and rethinking of geological concepts by field geologists. In *The Continental Crust* Rolf Meissner succeeds in providing a thoughtful and complete overview of the progress of the past decade, with an emphasis on seismological contributions.

The book is essentially in two parts, each about 200 pages. The first part (chapters 1 through 4) begins with basic definitions of the crust, lithosphere, and asthenosphere from a planetary perspective and continues with a useful discussion of laboratory and field measurements of the physical properties of the lithosphere and its constitutive materials. Included are seismological, electrical, potential field, stress determination, and laboratory methods. Overall, this part of the book is far superior to existing texts on geophysical methods, which are generally geared to seismic exploration rather than broader investigations of lithospheric structure. However, many readers will want to supplement this book with another that gives more details regarding the intricacies of the acquisition, processing, and interpretation of deep seismic reflection data.

The second part of the book presents current ideas regarding the composition, seismic structure, and evolution of the continental crust. The exposition on the mineralogy and petrology of the crust (chapter 5) rarely goes beyond college-level material, and a graduate-level course based on this book would certainly benefit from the addition of an advanced review of the petrology of the crust. The final two chapters, comprising some 150 pages, are more advanced and provide a valuable and insightful discussion of the seismic structure of the earth's crust and its probable evolution. For the research scientist, these highly current and complete chapters will form the heart of the book, material to be read and considered more than once. There exists no comparable critical summary of the key seismological observations and their geological implications. Rather than providing long lists of facts or an endless catalogue of examples, these chapters emphasize what is known about the deep structure of shields, platforms, rifts, orogens, margins, and so forth, and what this structure implies for geologic understanding of crustal evolution. The arrangement of these final chapters in chronological order, from the pre-Archean to the Phanerozoic, provides a valuable perspective on the evidence for changes in the evolution of the crust through time.

The scientific presentation in the book is well balanced, but fortunately Meissner is not averse to revealing his personal views, which have evolved over many productive years of research. Two examples are worth noting. One is his view that vertical crustal accretion (magmatic underplating and similar mechanisms), rather than horizontal accretion, is the primary mechanism of crustal growth. This concept is less surprising when one realizes that Meissner regards the creation of an island arc as vertical growth (upwelling of magma), whereas the horizontal transport and accretion of an island arc at a continental margin are not counted as creating "new" crust. A second novel view concerns the mobility of the crust-mantle boundary in active areas; this concept is invoked to explain unusually thick or thin crust and in some cases multiple Mohos. Recent seismic reflection data appear to support the concept of a mobile Moho.

The Continental Crust is a valuable, important, and much needed addition to the geophysics literature. It is very readable, with clear, well-chosen illustrations. I recommend it highly to students and researchers alike who seek an excellent survey of current geophysical research in continental crustal studies.

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Structure in Ecology

A Hierarchical Concept of Ecosystems. R. V. O'NEILL, D. L. DEANGELIS, J. B. WAIDE, and T. F. H. ALLEN. Princeton University Press, Princeton, NJ, 1986. viii, 254 pp., illus. $45; paper, $14.50. Monographs in Population Biology, 23.

Ecological systems comprise many populations of different species of organisms and the abiotic parts of the environment with which they interact. Such systems have no boundaries in space or time—they are not discrete, identifiable units like organisms.