

at the formation of the Club of Budapest, and meshes well with the second chapter, in which Laszlo describes the phases in which he transformed himself from a concert pianist to one of the world's premier thinkers on evolutionary matters. These two chapters couple with David Loye's interesting and informal history of the General Evolution Research Group, describing it aptly as a "strange attractor" in the chaotic world of thought on evolution. Taken together, these three essays do an excellent job of setting the stage for an understanding of the current state of advanced evolutionary thought.

In the second group of essays, the authors discuss the manners in which human beings effect the evolutionary process. The first article, "Evolution, the Old View and the New View," is an excellent overview by Fritjof Capra of the process by which neo-Darwinian theories are themselves moving toward a more advanced envisioning of the processes and interactions of evolution, paying particular attention to the theoretical frameworks advanced by Lynn Margulis. The article showcases Capra's skills at lucid description, and is one of the best outlines of recent evolutionary theory to see print.

As is appropriate in a volume honoring Erwin Laszlo, most of the remaining chapters in this section of the book deal with Laszlo's quantum-vacuum interaction (QVI) field theories. Laszlo's theories are presented in a readable overview by David Loye; the other articles describe more detailed aspects or applications of this theory. Of particular interest is Raymond Trevor Bradley's linkage of QVI field theory with holon theory, Karl Pribram's work, and the later essays of Jean Piaget; the article also includes an especially interesting description of social behavior in communal settings, linking it to the theoretical perspectives discussed above.

The third section of *Evolutionary Outrider* is perhaps the most interesting to a more general readership, with four essays examining the ways in which humans can take definite steps to advance the evolution of humanities. Darwin's neglected writings concerning the moral sense inform David Loye's scene-setting essay, which sets the stage for the remaining chapters of the book. Riane Eisler's theoretical description of cultural transformation theory is nicely complemented by Ralph Abraham's description of practical efforts in shaping evolution on the World Wide Web. And, as the reader by now is hoping, the final chapter, by Paul Ray, shows that an increasing percentage of the population is engaged in some sort of transformative effort—a particularly cheering conclusion, considering the essential nature of such efforts.

The essays in *Evolutionary Outrider* were collected in honor of Ervin Laszlo, whose ambitious goal is the development of a fully articulated transdisciplinary unified theory that would unite the physical and human sciences, a theory operating at the highest levels of abstraction and inclusiveness. No one would argue that that lofty goal has been met, or is even likely to be met in our lifetimes. But *Evolutionary Outrider*, while suggesting the global importance of such theoretical work to everyday life, also demonstrates that progress toward such a goal is being made in a variety of disciplines, and perhaps even by the population as a whole.

This book is a "must-read" for those seriously interested in the philosophical underpinnings, as well as the cutting-edge thought, concerning the future of humanity and its world.

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BOOK REVIEW

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The Narrative Universe, Italian original *Origini di Storie* published by Feltrinelli, 1992, by Mauro Ceruti and Gianluca Bocchi (Translated by Luca Pellegrini and Alfonso Montuori), Hampton Press, New Jersey, 2002. pp. 279, (ISBN: 1572732806), paperback, \$26.50 USD.

There seems to be something about humans that compels us to create and tell stories—or narratives—and in particular origin stories that situate our present and future within the context of the cosmos whence we came. Whether it be the first hominids who spun stories in the form of the cave paintings at Lascaux, or the first civilizations of the ancient river beds of the Indus, Tigris, Euphrates, and Nile where the first elaborate mythic-religious narratives emerged, or our modern age's own high-tech movie makers such as Steven Spielberg and George Lucas who craft the imaginary epics of our era, the human race seems inexorably drawn toward situating itself within cosmic narratives.

Should we be surprised then that the discoveries emerging from the post-modern evolutionary sciences of complexity, physics, biology, paleontology, and anthropology indicate that the universe can be compared to an epic novel rife with unpredictable and dramatic bifurcation points as well as contingent pathways of irreversible development? Given the human craving for a story, the critical minds among us might ask: is this "discovery" simply a disguised form of naïve projection on the part of a species that cannot stop itself from craving a good story? Put flatly: is the universe truly a narrative or are we humans simply projecting our narrative craving onto the universe? If readers of Mauro Ceruti and Gianluca Bocchi's recently translated *The Narrative Universe* grasp the implicit and underlying theme of this multi-faceted book, then the answer appears to be that there is a participatory and recursive relationship between the way humans know (our narrative epistemology) and the way we situate ourselves in the universe (our narrative cosmology). Ceruti, an evolutionary epistemologist at the University of Bergamo, and Bocchi, a cultural historian and business consultant, have woven their imaginations and scholarship together into a book that is remarkable not only for its breadth of topics and depth of scholarship but, more importantly, for the way it eschews the temptation to solve "the narrative problem" in favor of elegantly providing readers with a "narrative feel" with the book's overall tone and organization.

On the face of it, *The Narrative Universe* might best be described as a *planetary* book, meaning that the interwoven topics of history, biology, linguistics, epistemol-

ogy, physics, comparative religion, paleontology, and cosmology are treated not as branches of knowledge unto themselves but as contributions to an integrative planetary wisdom. Challenging the naïve and anthropocentric certainty of early modern Western science and epistemology, Bocchi and Ceruti open their readers to a new vista from which to contemplate and engage our current planetary moment of cultural and epistemological diversity. Rare indeed is it that a book dealing largely with interpreting the historical development of evolutionary theory within the context of Western history will feature on its front page a quotation from the Native American Lakota shaman Black Elk and then proceed to interweave imagery of the Hindu god Shiva with detailed critiques of Darwinian evolutionary theory and feminist interpretations of cultural anthropology. For the reader to really "get" this book, a more gestalt-like approach must be taken, in which the parts are understood both to make up and reflect a loose mosaic wholeness that is apparent throughout the book. Bocchi and Ceruti's eclectic yet unified style is itself reflective of the nature of the planetary era they seek to describe: the richness, complexity, and diversity of natural and cultural history is not homogenized and categorized but rather narrated, embraced, and celebrated in all its multi-faceted richness. We might say this book is a diamond for which glances from many angles reveal an infinite diversity of sparkling glimmers. Readers ready and willing to enter into the rich complexity a planetary book has to offer will be surprisingly rewarded by scholarship that is "integrative" in the sense of bringing together but not "integral" in the sense of locked into a tight formalistic structure. Bocchi and Ceruti see the planetary whole without simplifying it to a reductive planetary system. They embrace the complex by giving us a complex narrative, one fitting of the title the translators aptly have given to the English translation.

A FIVE PART FUGUE

Divided into five independent but interwoven parts, *The Narrative Universe* starts in part I where most Europeans feel comfortable and many Americans are woefully ignorant: history. Extirpating the dark soiled roots of humanity's diverse cultural histories, Bocchi and Ceruti highlight the results and implications of recent scholarship by cultural historians and archeologists (Riane Eisler and Marija Gimbutas) and geneticists and physiologists (Luigi Cavalli-Sforza and Jared Diamond). Showing the influence of their previously cowritten book (*Solidarity or Barbarism: A Europe of Diversity Against Ethnic Cleansing*), the authors display both erudition and sensitivity to the human family's genetic heritage, both its rich diversity and underlying unity. In doing so, they lay the foundations for a planetary comparative/mythic history. Bocchi and Ceruti discuss how different preclassical cultures developed mythic narratives articulating the relationship between the dualities of feminine and masculine, earth and sky, yin and yang. The Greeks, for example, proceeded to polarize this duality in the mythic expression of Order subduing Chaos, while Hindu civilization instead found a *dynergic* (a term coined by Gyorgy Doczi) approach to the tension of opposites, in which one duality does not dominate the other but nourishes an ever generative interplay between them. (This is noted in the imagery of the interpenetrat-

ing yin/yang symbol of the Eastern religions and the intertwining snake imagery of ancient Egypt's caduceus.) These mythic cosmologies from humanity's ancient cultural pasts are not so much explained by Bocchi and Ceruti as much as they are entered into imaginatively so that readers can intuit how our distant ancestors related to the cosmos through narrative stories. They, like us, created narratives to make sense of their universe.

Fast-forwarding in part II to the birth of the modern Western scientific worldview, again the narrative cosmological theme is apparent. Here the authors highlight how a few critical historical bifurcations (such as the Copernican revolution and Columbus' discovery of the Americas) influenced the epistemological and cosmological assumptions of Western science. As the authors demonstrate, those assumptions in turn shaped the Western interpretation of evolution. As skeptical postmoderns, we look back quaintly on the pre-Copernican cosmology of medieval Europe, but Bocchi and Ceruti reveal how the Copernican shift was not only a break from an ignorant medieval worldview but also served to break apart the previously entwined couplet of Western cosmology and epistemology. In 1611 the English poet John Donne captured the sentiment of this cosmological fissure of the post-Copernican era with his phrase "all coherence gone," while Descartes ushered in the modern epistemological reaction: all knowledge must stand on certain epistemological ground to compensate for the newly discovered nongeocentric and groundless cosmos. Put succinctly, the discovery of an uncertain cosmos sparked a reactionary quest for certain knowledge.

In part III the theme turns to the tension between Essentialism and evolution. Did Darwin's discovery stand Plato on his head? Plato's Essences (or Forms) are eternal, but the Darwinian revolution implies the opposite: things develop. Erich Voegelin once said that each new paradigm, or wave of thought, must pay an obligatory debt to its past in the form of an intellectual mortgage payment that links the new paradigm to the previous worldview like an umbilical cord links a child to mother. Unbeknownst to them at the time, the prominent discoverers of evolution: Hutton, Cuvier, Buffon, Lyell, Linnaeus, Lamarck, Wallace, and Darwin were indebted to the paradigm of Plato's eternal Essences, and it showed in the way they struggled to embrace the full implications of the evolution revolution. Could nature really be so free, creative, and contingent as the fossil record and planet's biodiversity seemed to indicate? The gestalt switch from a pre-formed world of Essences to one contingently crafted by evolution's gradual unfolding was not an easy or instantaneous one. Bocchi and Ceruti highlight the intellectual turning points of the nineteenth and twentieth centuries, and their treatment of the correspondence between Lyell and Darwin on this subject gets to the heart of the Darwinian revolution: history, not preformed Essences, is responsible for the earth's diversity of flora and fauna. The Great Chain of Being should be re-named the Great History of Becoming. Intellectually impaired by their mortgage to the Platonic paradigm, the first evolutionary theorists underestimated the extent to which natural selection was capable of producing what Darwin called the "tangled bank" of life.

In part IV the powerful image of the tripartite god Shiva takes center stage. Unlike the polar counterparts of Brahman and Vishnu, who, Bocchi and Ceruti point out were imported into India, Shiva was a pre-Indoeuropean god of the Indus river val-

ley. At once creator, sustainer, and destroyer, Shiva serves as a dual symbol for Bocchi and Ceruti. On the one hand Shiva is symbol of multicellular life's 570 million year history of death and rebirth, the successive waves of mass extinctions and reflowerings of biodiversity. But on the other hand, Shiva also symbolizes of the *unitas multiplex*: the unity-in-diversity that pervades our planetary moment.

Part V concludes by coming full circle. Where part I had discussed the ancient world's narratives of cosmological origins and destinies, part V explores those of our contemporary scientific age. Bocchi and Ceruti summarize cogently the new scientific attitude beginning to flower, one that embraces contingency, opportunity, diversity, uncertainty, and complexity over the traditional scientific metaphors of necessity, progress, inevitability, and omniscience. In this last part Ceruti's epistemological brilliance comes to the forefront, wherein he challenges science's outdated Laplacian claim to an omniscient bird's-eye view of "truth." Postmodern philosophy has demonstrated the incompleteness of any singular meta-point of view or narrative, thus what Ceruti and Bocchi call for is the complex engagement with a multitude of mininarratives. Furthermore, Ceruti emphasizes that the time has come to make transparent the often-unacknowledged way in which the knower participates in the act of knowing and the creation of valid knowledge. Contemporary scientific observations of the universe are making this ever more apparent. As the authors write, "We are a part of the universe. Observing the universe, we are also observing our values, our fears, our hopes, and our myths" (p. 251). Here then is the complex and recursive relationship between the way humans know (epistemology) and the way we situate ourselves in our world (cosmology).

CONCLUSION

In a time when it is imperative that we educate for a planetary citizenship that embraces rich complexity instead of dogmas and fundamentalisms, and in a time when cultural diversity is being mutilated and deafened by corporate globalization, Bocchi and Ceruti have written an exemplary book for the planetary era, one that resists the temptation to rigidly synthesize its message into a "one-size-fits-all" answer to the planetary problematique. As such, I highly recommend this book for educational settings in which the planetary is cultivated in favor of the compartmentalized, the whole is prioritized over the part, and diversity is celebrated instead of homogenized.

I do have one noteworthy criticism of this otherwise prepossessing book. In light of current geopolitical tensions and in light of Bocchi and Ceruti's embrace of our planet's cultural and historical diversity, the absence of the cosmological, cultural, and religious contributions of the Islamic world. For example, it is a shame that the florid mystical religiosity of the great Sufi mystic Rumi, who was born in Afghanistan was not included. It would have woven one more necessary thread into Bocchi and Ceruti's planetary tapestry. If humanity aspires to form a sustainable planetary culture, then certainly the great shadow of the West—the world of Islam—must be included in the rich mosaic of our complex and interwoven future.

The Narrative Universe is a book for our times. Facing a contingent future, hu-

manity must foster ways of thinking about and engaging with the full spectrum of diversity that the evolutionary process has brought forth on our delicate planet. Bocchi and Ceruti's message is that we live in an open, creative, and opportunistic universe. This may be frightening for some, but it certainly makes for great narrative. Today, we are free to participate in the ongoing narrative of our universe's future.