

death) when we are richly socially integrated and supported” (118). One net effect of these various influences is that Wheeler believes the social worldview she advocates has ethical power lacking in traditional moral nostrums.

If I am mindful of the processual self that I am, and mindful of the subtlety of my co-arising, co-dependent processual existence among other creatures, and mindful that this means that *all* my doings reach out into all life, my reaching out will be spontaneously directed in right ways which are not primarily motivated by narrow self-interest. This is not a matter of some mystical fantasy of being ‘good’, or ‘spiritually pure’, by renouncing self-interest and consciously going about ‘caring for others, or the Other’: it is about recognizing the processual nature of self (as constituted) in community, and pursuing the furtherance of, and real experience of joy in, that (98).

Some persons, especially students, might be put off by Wheeler’s writing style. But despite the rather Teutonic length and complexity of some of her sentences—evident in the foregoing quotations—her thought is clear and compelling. There are redundancies in her writing, but these merely underscore what she thinks is important. In sum, this is a rich and impressive work on its own.

It can also inspire those who are eager to see Polanyi’s thought making important contributions to contemporary thought.

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Silver Rattasepp and Tyler Bennett (eds.), *Gatherings in Biosemiotics*, Tartu Semiotics Library 11. Tartu, Estonia. University of Tartu Press 2012. Pp. 244. (<http://www.ut.ee/SOSE/tsl.html>) ISSN 1406-4278; ISBN 978-9949-32-048-6.

This collection in the Tartu Semiotics Library (an international series on semiotics) packages interesting material which can serve to introduce the relatively new area of interdisciplinary inquiry called “biosemiotics.” If one googles “biosemiotics,” Wikipedia points out the etymological roots of the term in “life” and “sign” and that there is now a growing field of semiotic biology that studies the production and interpretation of signs and codes in living nature. To dig deeper, look at essays in the opening section, “Approaches to Biosemiotics,” which discusses the importance of semiotics for biology and the issues currently facing this new field. The brief essays in the second section provide a more historically-oriented overview of the development of biosemiotics and the series of international conferences, the Gatherings in Biosemiotics (hereafter Gatherings) that have been held since 2001. This volume pulls together material that commemorates the first

twelve of these conferences (in years after 2012, Gatherings have also been held and they continue to grow). Almost all of these meetings have been held in Europe and have involved an international set of scholars from many disciplines. Here I will focus on a few of the essays in the “Approaches to Biosemiotics” section, which presents perspectives of several important figures commenting on the nature of/ functionality of and emerging issues in biosemiotics. But I begin with brief comments on historical essays and documents in the second section of the collection. I altogether omit any consideration of the third section of the volume, which is a collection of the abstracts for papers presented at the 2012 Gatherings meeting. But these abstracts clearly show the broad interests, scientific and philosophical, that fall under the rubric “biosemiotics.”

Jesper Hoffmeyer’s “A Short History of Gatherings in Biosemiotics” recounts how he, Claus Emmeche and Kalevi Kull came to organize the first Gatherings conference in 2001. Hoffmeyer is a Danish biochemist whose illuminating writings predate the first Gatherings meeting. His work masterfully draws on the philosophical ideas of Peirce and the Estonian-born German biologist Jakob von Uexküll (1864-1944) to frame his biosemiotic perspective. His 1993 Danish book, *Signs of Meaning in the Universe* (published in English in 1996 by Indiana University Press) articulately makes a case for the “semiosphere.” In the nineties, Hoffmeyer and others already were doing

presentations at academic conferences and some of these scientists found support for such work in semioticians like Thomas Sebeok and John Deely. Hoffmeyer and other early figures worked in scientific circles interested in evolutionary biology to question the prevailing genocentric paradigm. Biosemiotics was also on the agenda in medical conferences. It was a natural next step to move to an interdisciplinary conference like the Gatherings dedicated to the study of the semiotics of living systems. Hoffmeyer emphasizes the very eclectic and egalitarian openness of the first and subsequent meetings; in his narrative in this volume, he mentions many important contributors to biosemiotics, early and more recent figures, and bibliographic information about most can be found in references in his and other essays in the collection.

Don Favareau’s “Twelve Years with the Gatherings in Biosemiotics” complements Hoffmeyer’s essay and is a very personal walk through the first twelve Gatherings. Along the way (and in his references), what he provides is a concise and interesting introduction to many of the figures who have joined the biosemiotics movement. Favareau (whose interests focus on the neurobiology of language and philosophy) seems to have become the de facto historian of biosemiotics (see his “The Evolutionary History of Biosemiotics,” in *Introduction to Biosemiotics: The New Biological Synthesis*, edited by M. Barbieri, 1-67 [Berlin: Springer, 2006] as well as Kalevi Kull’s shorter “Biosemiotics in the

Twentieth Century: A View from Biology” in *Semiotica* 127 [1/4]:385-414).

Rounding out this section with historical reflections on the Gatherings, are a dozen brief statements by persons who coordinated the first twelve conferences. These statements provide insight into the focus and ambience of each meeting; attached to each is a set of references and a schematic of the program, listing session topics, presenters and papers.

In the opening “Approaches to Semiotics” section, there are five essays by articulate and widely-recognized figures who have contributed to discussion about biosemiotics, Kalevi Kull (a botanist), Terence W. Deacon (a neuroscientist and bioanthropologist), Howard H. Pattee (a biophysicist), Stuart Kauffman (a physician, theoretical biologist and complexity researcher) and Myrdene Anderson (an anthropologist). In this brief review, I can do no more than reference some of these discussions.

Kalevi Kull’s “Advancements in Biosemiotics: Where We Are Now in Discovering the Basic Mechanism of Meaning-Making” is a review of twenty years of achievements of biosemiotic explorations and an assessment of problems embedded in these achievements. Although his discussion of the range of biosemiotic inquiry is brief, Kull identifies major thinkers and ideas they have introduced to the field. He notes, for example, that Hoffmeyer extended the usage of the concept of “intentionality” in biology and Deacon “introduced the concept of ententionality that covers

the phenomenon upwards from the first processes of life” (12). Kull argues biosemioticians must do “further modeling of minimal semiosis in operational terms, i.e., in the way that would make it possible to apply semiotic models on the cellular level and to test these empirically” (13). Running through biosemiotic literature is both an appreciation for and an ambivalence toward Peircean semiotics; Kull suggests the field needs to be eclectic enough to move beyond some elements of the Peircean account of semiosis. Clearly, Kull is put off by Peirce’s speculation about cosmic semiosis. He suggests that in the future biosemiotics needs to draw more extensively on ideas about the *umwelt* developed by Jakob von Uexküll, since such a framework allows a stricter division of territory that promotes a more empirical orientation: “Biophysics studies the physic-chemical structure of organisms, biosemiotics studies what the organisms may know, what are the types and ways of knowing, and what it does with the world” (17). Kull argues that biosemiotics must do further work to unravel the relationship between codes and semiosis. Codes are built by semiosis and serve as “a frozen pragmatic, a frozen habit” (18) but semiosis carries and rebuilds codes and apparently cannot exist without codes. The major limitation today in biosemiotics is “the insufficient development of models of semiosis” (21) Kull favors natural language as a better tool than formal languages for modeling semiosis, but contends most natural language models need to be updated so

they also can explicate lower levels of semiosis.

Terence Deacon's two-page comment (see Donald Crosby's review of Deacon's lengthy *Incomplete Nature* in *TAD* 38:3) is akin to views touched in Kull's longer discussion: he contends that mechanistic and computational conceptions of life and mind have revealed not much about basic living systems but neither have models drawn from human phenomenal and communicational experience. Deacon thinks biosemiotics currently has only "an un-grounded theory of semiotic processes at the molecular, cellular, and organism level"—we are no closer today to knowing how "mentality emerged from and grew out of organisms during their evolution" (26). Howard Pattee's equally short contribution bluntly warns that calling physicists "reductionists" and "mechanists" and presenting a biosemiotic perspective as a "liberation" from such views (as he contends Hoffmeyer suggests) succeeds only in annoying physicists. Pattee recommends that biosemioticians should "engage more physicists and biologists in direct conversation" (28). Myrdene Anderson describes biosemiotics as a "centripetal swirl" (47), a dizzying array of interdisciplinarity. He regards the plurality of perspectives as reflecting the fusion that is "linguiculture" (47).

Stuart Kauffman's "From Physics to Semiotics" is an intricately complex, broadly philosophical essay that attempts to "take us from our deeply received scientific world view... spawned by Newton and modern physics, to an entirely different,

newly vibrant, surprising, unknowable world of becoming" (30), which is the world that biosemiotics seeks to represent. In a mathematical sketch, he argues that "in the lifetime of our universe, only a tiny fraction of all [presently existing] proteins can have been created" (33) and this means such things as a bacterial cells dividing must be regarded as "Kantian self-recreating wholes," that is, complex entities in which "the function of a part is its causal role in sustaining the existence of the Kantian whole" (34). Functions are thus "real in the universe":

...unlike physics and its law entailed trajectories, the evolution of the biosphere cannot be entailed by laws of motion and their integration. No laws entail the evolution of the biosphere, a first and major step beyond physics at the "watershed of life" (34).

How does Kauffman think the "watershed of life" arose in the universe and how does the biosphere evolve? He contends the simplest Kantian wholes are "collectively autocatalytic sets" that statistically could be expected to emerge from "sufficiently diverse 'chemical soups'" (35). The evolution of the biosphere itself occurs as adaptations in living forms occur and find a new use in a new niche (i.e., Darwin's "preadaptations" and Gould's "exaptations"). Exaptations cannot be named in advance but only after they have come to exist; they are what Kauffman calls the coming to be of a

“new adjacent possible empty niche” (39) and “the adjacent possible” (40). We do not know ahead of time the new variables that will become relevant in the evolution of the biosphere and therefore we cannot develop probability measures for evolution. We cannot reason about life as we have most often reasoned about physics: “...evolving life is not only a web of cause and effect, but of empty niche opportunities, that enable new evolutionary radical emergence.” (41).

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Barry Allen, *Vanishing into Things: Knowledge in Chinese Tradition*. Cambridge: Harvard University Press, 2015. Pp. 304. ISBN-13: 978-0674335912, \$36.45 (hb).

Although technology and globalization are continually making the world more connected, different philosophical traditions can still seem worlds apart. Graduate programs specializing in non-Western philosophy remain rare in the English-speaking world. Among the twenty highest-ranked programs evaluated on the 2015 Philosophical Gourmet Report, the most widely-cited ranking system for philosophy graduate programs, only University of California, Berkeley boasts a program in Asian philosophy.

The neglect may be due in part to the unfamiliarity of the subject matter. A deep study of Asian philosophy requires philosophers in the English-speaking world to

become familiar with a second set of basic concepts and foundational texts—to say nothing about foreign languages. The supposed impropriety of judging another culture has probably not made matters easier for scholars interested in critically engaging other traditions. Attaining academic competence is challenging enough without these added hurdles.

Those few philosophers who are educated in multiple traditions are well-situated to point out paths not taken—and paths too readily taken—by the rest of us. Few books exemplify this better than Barry Allen’s *Vanishing into Things: Knowledge in Chinese Tradition*. Allen is the author of three previous books dealing with comparative philosophy. Here he synthesizes two millennia of Chinese thinking about knowledge, and contrasts it—favorably—with the dominant trends in Western thought.

Vanishing may be of particular interest to students of Michael Polanyi. Throughout his philosophical career and in his magnum opus, *Personal Knowledge*, Polanyi challenged assumptions that Western philosophers, especially post-Descartes, almost invariably take for granted. Chief among them are: that paradigmatic knowledge lacks a tacit dimension, that knowledge can be acquired by the implementation of some mechanical procedure, and that there is no voluntary or subjective component to knowledge.

Allen shares many of Polanyi’s complaints. Modern Anglophone philosophers, he alleges, remain “curiously