

LITERATURE REVIEWS

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SOME IMPLICATIONS OF BIOLOGICAL INFORMATION

Biological Information: New Perspectives. Robert J Marks II, Michael J. Behe, William A. Dembski, Bruce L. Gordon, and John C. Sanford, editors. 2013. Singapore: World Scientific Publishing. 584 p. Hardcover, \$178USD.

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This is an unusual book, as will be described later. It is a collection of papers presented at Cornell University in 2011 on biological information. The subject matter is interesting to those who want a deeper knowledge of the Intelligent Design controversy and are willing to put in the requisite effort. The papers are all critical of the current neo-Darwinian synthesis. Although most of them are from intelligent design advocates (including a few creationists), two papers are specifically from advocates of self-organizational theory who do not believe in intelligent design.

The book is divided into four sections. Each section has an introduction written by one of the editors. The first section is on information in biology in general, and has a fairly strong chapter by Gitt, Compton, and Fernandez on information itself, and another one by Dembski, Ewert, and Marks on expanding the “no free lunch” theorem to searches where various locations will have different probabilities of finding a given target in them. After a couple of interesting papers of lesser significance, another paper by Ewert, Dembski, and Marks on the computer program Tierra, an especially good paper on multiple overlapping genetic codes by Montañez, Marks, Fernandez, and Sanford, and two papers on entropy, by Sewell and by McIntosh, round out the more noteworthy papers of Section 1.

Section 2 contains a review of junk DNA by Wells, written before the ENCODE papers had come out but agreeing with them, which shows that ID has predictive power. Following that is a series of papers reporting the results of using the computer program Mendel’s Accountant, and reasonably

demonstrating that natural selection under reasonable circumstances is not only unable to detect most beneficial mutations, but cannot even purify the genome from deleterious mutations. Brewer, Smith, and Sanford then apply these principles (“Genetic Entropy”) to the influenza virus, with stunning results, and experimental confirmation of their predictions are documented in a later paper referenced in the appendix to the chapter, and available online. This chapter and the accompanying paper are worth a read if one does not read anything else in the book. A couple of papers comparing genetic information to computer code close out the section.

Section 3 starts with a paper by Macosko and Smelser pointing out that the genetic code is at least in the top millionth of all possible codes, and possibly completely optimal. The difficulty of doing this by natural selection is perhaps obvious. Next is an interesting but experimentally unsubstantiated proposal by Dent looking for high-frequency communication between cells. A mathematical approximation by Behe shows that in most cases adaptations that lose information are more likely to be selected for than those that gain information. Wells writes another excellent chapter on the membrane code, which is separate from the DNA code, and finally there is an excellent chapter by Axe and Gauger on the multiple difficulties with explaining the origin of metabolic pathways by any unguided evolutionary process, and deducing the general properties of an adequate explanation of those pathways.

Section 4 has an introduction by Gordon that comments on the similarities and differences between ID and self-organizational theory. Kauffman proposes that “life bubbles forth”, and since the probabilities are unknown, ID arguments are off-base. His critique of standard evolutionary theory seems to be based on the proposal that this theory requires evolution to be inevitable. Weber appeals to emergent behavior, but spends a good deal of his time arguing that the origin of life can be accounted for without design, without much comment as to exactly how emergence explains that origin. Neither author spends much time arguing against current evolutionary theory. One may quibble with their theories, but their attitude of dialogue is far preferable to that of some advocates of neo-Darwinism described below.

Perhaps the most unusual and important aspect of the book is the story of its publication. The conference was held in May and June of 2011. The book was contracted to be published in 2012 by Springer Verlag (a page is still up as of 4 June 2015—see <http://www.springer.com/us/book/9783642284540>), but some loyal Darwinists found out that this would happen and threatened the company with a business boycott

if they published the book. Springer Verlag then backed out of the deal, and as enforcing the contract would have required a trial in Berlin and would have resulted in delay of publication of the papers for years, the editors opted to go with another publisher, World Scientific Publishing, instead. This involved over a year's delay in publication. The story can be found, complete with links to the views of some opponents, at http://www.evolutionnews.org/2013/08/on_the_origin_o_3075521.html.

The publication is unusual in that, although a hardcover copy will cost \$178.00 at World Publishing and lists for \$90.00 to 160.30 new at Amazon.com (again as of 4 June 2015), the e-book can be downloaded in chapters for free at <http://www.worldscientific.com/worldscibooks/10.1142/8818#t=oc>. Some of the illustrations of the e-book are in color where the hardcopy has only black and white for those illustrations. So if one only wants the information, buying the book is essentially giving a donation to the publishing company. Some may wish to do exactly that given the above controversy.