

FROM THE BOOK:

"The trouble with the general scheme of explanation contained in the metaphor of development is that it is bad biology. If we had the complete DNA sequence of an organism and unlimited computational power, we could not compute the organism, because the organism does not compute itself from its genes. Any computer that did as poor a job of computation as an organism does from its genetic 'program' would be immediately thrown into the trash and its manufacturer would be sued by the purchaser. Of course it is true that lions look different from lambs and chimps from humans because they have different genes, and a satisfactory explanation for the differences between lions, lambs, chimps, and us need not involve other causal factors. But if we want to know why two lambs are different from one another, a description of their genetic differences is insufficient and for some of their characteristics may even be irrelevant."

"Darwin's alienation of the outside from the inside was an absolutely essential step in the development of modern biology. Without it, we would still be wallowing in the mire of an obscurantist holism that merged the organic and the inorganic into an unanalyzable whole. But the conditions that are necessary for progress at one stage in history become bars to further progress at another. The time has come when further progress in our understanding of nature requires that we reconsider the relationship between the outside and the inside, between organism and environment."

ISBN 0-674-00159-1



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