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Elements in the Philosophy of Biology

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STRUCTURE AND FUNCTION

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Structure and Function

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Abstract: The history of biology is mottled with disputes between two distinct approaches to the organic world: structuralism and functionalism. Their persistence across radical theory change makes them difficult to characterize: the characterization must be abstract enough to capture biologists with diverse theoretical commitments, yet not so abstract as to be vacuous. This Element develops a novel account of structuralism and functionalism in terms of explanatory strategies (Section 2). This reveals the possibility of integrating the two strategies; the explanatory successes of evolutionary-developmental biology essentially depend on such integration (Section 3). Neither explanatory strategy is universally subordinate to the other, though subordination with respect to particular explanatory tasks is possible (Section 4). Beyond structuralism and functionalism, philosophical analysis that centers explanatory strategies can illuminate conflicts within evolutionary theory more generally (Section 5).

Keywords: structuralism, functionalism, evolutionary-developmental biology, explanatory strategies, evolution

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