

Review of: "Is gastrulation the most important time in your life?"

José M. Martín-Durán¹

¹ Queen Mary, University of London

Potential competing interests: No potential competing interests to declare.

This is an enjoyable read about gastrulation, a historical perspective on this fundamental process in animal embryogenesis and the current advances shaping and modulating our views on it. The author makes a good effort to highlight the difficulties in providing a unique definition that matches and unites under a single concept the fascinating diversity of gastrulation modes in animals. Biology, and developmental biology in particular, often suffers from typological thinking, in which embryological processes are simplified and typified in order to make a very complex process (e.g. animal embryogenesis) more accessible and comparable across taxa. This also affects the germ layer theory, as it simplifies the composition of an animal embryo at the time of gastrulation in a few (two, sometimes three) core developmental fates or "germ layers". Yet, it has been long recognised that there are multiple cases in which organs and tissues that in most animals develop from one germ layer form from alternative cells or germ layers in others. Gavin de Beer in "Embryos and Ancestors" provides a compelling criticism on the germ layer theory. Stating the limitations and nuances of the germ layer theory (as the author does with the definition of gastrulation) will provide a more balanced view of our understanding of gastrulation, maybe "the most important time in our lives".