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

Jeremy Green[1]

1 King's College London

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This is a nice essay covering some good historical and anatomical basics of gastrulation. In addition to a description of the basics, the essay's main contention is that neuromesodermal progenitors in the chordaneural hinge of vertebrates are somehow separate from gastrulation and thus defy the conventional view that gastrulation defines all of the primary axis. The alternative view, which may be more helpful in understanding what the neuromesodermal progenitors are doing, is that they are in fact part of gastrulation, (somewhat more) simply continuing the partitioning of cells between ectodermal (neural) and mesodermal layers. The hinge is only really different if one imposes what has to be a rather arbitrary end-point to the definition of gastrulation. Gastrulation is also “the most important” because it is certainly the event that establishes an axis, however much of the axis it misses out (and one could argue that the always-included pharyngeal endoderm is more important that then sometimes-excluded intestine). This definition as even partial axis formation has, incidentally, been historically important in establishing ethical limits to experiments on human embryos: before gastrulation one cannot talk about the embryo being an indiviual, given the potential for twinning, which requires twinned gastrulation. Gastrulation is also important because it is a common failure stage for embryogenesis and so its failure may account for a significant proportion of infertility. Finally, and on a more positive note, it is welcome to see gastrulation defined as a clearly morphogenetic event. There is a trend among non-developmentally-aware stem cell researchers to confuse gastrulation with germlayer-associated differentiation. These are linked but distinct processes.