Genetic Information and the Causal Parity Thesis

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Gene-centred approaches to organisms contrast sharply with those of Developmental System Theory, which are based on the Parity Thesis, according to which genes are on a par with other developmental resources, and there is further parity in evolution with regard to replication. Different versions of the Parity Thesis will be identified, and it will be discussed whether there is any interesting sense in which genes are privileged as causes or at least categorically different from other causal factors in development and evolution.

Relevant concepts of genetic information within the philosophy of biology include a transmission sense on the basis of efficient packaging, a semiotic sense on the basis of coding and arbitrariness, semantic and teleosemantic senses on the basis of natural selection, and a more specific representational sense on the basis of certain metafunctions. Different concepts of information will therefore have to be examined to the extent that they throw light upon parity claims that underlie radically holistic or more moderate emergentist approaches to organisms.

Finally, the dispositional modality of genetic causation will be looked into and linked to claims about parity or lack thereof in the discussion of genetic information. With the aim of enriching a causal powers analysis in biology, an attempt will be made to distinguish between properties of genetic causation that carry over to causation in general and properties that do not, and thereby between different ways of disposing towards an effect.