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EPILOGUE (complement to pp. 271-273 in I)

The predictor question — What is life? — asked by the brilliant physicist Erwin Schrödinger in 1945 has since been partially answered by the cracking of the enigma of the genetic code. However, it still leaves open the question of “How does this one-dimensional code specify a three-dimensional organism?”, a question relevant of topobiology (Edelman, 1988). At this epigenetic level, organizational principles of inanimate objects appear to be still valid even though complexified for animate ones. Preeminent among such universal principles is polarity emerged from the primary asymmetries of particulate matter (see I.B) and multi-expanded into the numerous biopolarities.

To bridge genetics and epigenetics still remains the great question of how genes control the transduction of the intrinsic molecular polarities into those cellular and organismic biopolarities? The bridge starts to be completed at the cellular level with the recent unravelling of genes controlling polarity of cytoskeletal macromolecules such as actin, myosin and tubulins (see IV.E), themselves somehow related to known cell positioning as exemplified by our *Allomyces* “sexual dipoles” (Plate I). However, the link remains elusive at the organismic level where some types of interaction should intervene between macromolecular polarities and DNA-controlled directional (head or foot in the Hydra model) morphogenetic gradients.

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