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# Between Molecular Ecology and Cytophysics

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## Abstract

From the 1940s onwards Paul A. Weiss and his group at the University of Chicago started a new research program on cell migration. This program relied upon Weiss' approach stating that the position of the molecules inside a cell determines the development (molecular ecology). 'Position' here means that cells coadapt to the physical and chemical conditions prevailing at that particular location. He interpreted development as the sorting and segregation of biochemically distinct entities into definite locations. Thus, two cells with similar components could develop and mature differently, depending on which molecules were situated on the inside and which on the outside. Weiss's approach to cellular development presupposes the spatial conditions of solid state systems as, for example, all surfaces and interfaces in the cell demonstrate them. These systems are the physical basis for the selective localization and the traffic management in the chemical machinery of the cell (cytophysics). My objection here is to briefly outline the experimental program of the Chicago Group, and to map it to Weiss' cell conception by images, with some incursions into the notions of positional information (Wolpert) and topobiology (Edelman).

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