
Maternal Effects and the Twentieth Century Sciences of Heredity

Richardson Sarah*¹

¹Harvard University – United States

Abstract

This paper explores the complex location of maternal effects research within the twentieth century sciences of heredity. In research on Mendelian inheritance, maternal effects were primarily recognized as a source of error to be controlled for in experimental manipulations. Molecular biologists similarly minimized maternal effects as they advanced a vigorous gene-centric vision of biological development governed by DNA. In contrast, critics of the gene-centric program seized upon observations of maternal effects to build a counterdiscourse to the hereditarianism they perceived in genetic research. Through studies of "maternal effects" on the offspring during fetal development and early life, researchers sought to prove the intuition that more is inherited by offspring than just DNA, and that DNA itself can be altered or overridden by other factors. Maternal effects research became one important empirical pillar of the argument, increasingly embraced today, that "it's not all in the genes." Yet against this polarized narrative of contestations around maternal effects in the twentieth century life sciences, the literatures of early- and mid- twentieth century agricultural breeding, eugenics, antenatal medicine, and reproductive physiology situated maternal effects firmly within a hereditarian, gene-centric framework. Reclaiming, schematizing, and historically situating these conceptions of maternal effects within the twentieth century sciences of heredity, this paper brings maternal effects research into relief as a critical and multivalent arena for theorizing the nature of heredity in the twentieth century.

*Speaker