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# Stem Cell Research and the Embryo. Conceptual and Practical Shifts in the 1970s

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## Abstract

**Session: A Longue Durée History of the Cell. Old Questions and New Perspectives (Marion Thomas, Florence Vienne, Susanne Lettow, Stéphane Tirard, Christina Brandt)** In this paper, I will trace the research problems that scientists dealt with in developing embryonic stem cell research in the 1970s and which led to the first isolation of so-called ‘embryonic stem cells’ from mouse embryos in 1981. The paper aims at analyzing the shifts in research practices that guided the work on embryos and related cell cultures at that time. In particular, the paper will analyze the developments at the intersection of research on mouse *chimera* and research on cancer, especially work on murine cell lines derived from a very specific tumor that appears in the gonads of mice: the so-called ‘teratocarcinoma’. In the 1970s, a rapidly developing new research field emerged from this conjunction: the widespread use of then so-called teratocarcinoma *stem* cells as promising models for the study of embryogenesis *as well as* carcinogenesis. Their material properties shaped the concept of an *embryonic* stem cell because they became an implicit reference model for materially identifying those cell cultures that were isolated directly from the developing embryo and which were named *embryonic stem cells* not earlier than 1981. Finally, the conceptual shifts of the notion of a “stem cell” (that were related to these developments) will be discussed against a broader historical context that goes back to the late 19th century when the term “stem cell” was coined.

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