

cerning methods. The strongest contribution that this book offers the field is precisely the introduction of an effective tool for the study of this epochal change, conceived within a conceptual framework that is clearly inspired by Foucault. Here I am referring to the authors who developed aspects of the “molecularization/geneticization thesis” (in particular Rabinow, Rose and Novas), but also materialist analysts of biomedicine (such as Sunder Rajan and Cooper), or biopolitical philosophers (such as Agamben and Esposito). According to this perspective, the present must be read in the light of an epochal change displaying the intensification of control over life. This search for belief and power systems (*épistémé*) is useful for drawing connections between laws, epistemic apparatus, governance, economic circuits, social relations, representations, and so forth. Simultaneously, the willingness to find out the spirit of an epoch expresses a tendency towards the whole and the structure. A willingness that is complemented with a sensitivity, proper of Science and Technology Studies, toward objects, their agency, their ability to mediate, as well as their discursive and material trajectories. The conceptual framework of bio-objects is an analytical tool that is as malleable, flexible and generative as the forms of life (or non-life) that it aims at studying. Above all, it is capable of combining a detailed analysis of case studies with a broader perspective on the transformation of life within and beyond biomedical research.

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### **Sarah B. Franklin**

*Biological Relatives: IVF, Stem Cells and the Future of Kinship*

Durham and London: Duke University Press, 2013, pp. 376

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Thirty-five years after an In Vitro Fertilization (IVF) procedure has for the first time lead to the birth of a living human being and five millions test-tube babies later, ethnographic accounts witnessing how IVF has spread around the globe proliferate. In the meantime, a flourishing reproductive transnational industry has emerged and the use of human reproductive substance for regenerative medicine has become so much desirable and legitimate as it is profitable for global pharmaceutical and health services market.

Among this collection of works, Sarah Franklin's *Biological Relatives: IVF, Stem Cells and the Future of Kinship* surfaces to wisely refocus on the very scope of ethnographic accounts in theorizing socio-biotechnological dynamics and to make a point about the way in which the normalization

of IVF plays a role in the current reciprocal understanding of biology and technology.

The book has the urgent ambition to explore how we might think about reproductive substance as a technology, and technology as a reproductive substance; and the ways in which we might combine these approaches to make sense of the contemporary “age of biology”. Franklin’s approach resists and goes beyond the presumptive separation of domains characterising the theories of social embeddedness of IVF. To reverse such an approach, she elaborates a definition of technology that cuts through diverse disciplines and that emerges in its ambivalent and co-constitutive relationship with biology.

The author investigates the very meaning of “being after IVF” in its temporal, spatial, logic and qualitative terms. Without eluding the complexities of analysing IVF production and reproduction processes, Franklin rather scrutinizes contingent ambivalences, illustrating their cultural, political and technological powers. By exploring IVF socio-biotechnological life and legacy Franklin spans across a variety of contemporary pressing phenomena, including PGD, stem cells research, mitochondrial DNA, regenerative medicine, feminist reproductive politics, cybrid human-animal embryos, synthetic biology.

The introduction of a Marxist approach to highlight the very substantial value of the “hand-tool-embryo” allows Franklin to unfold and re-compose one of the very mechanisms by which biology is technological and technology is biological and to illustrate how new kinds of kinships are crafted through such mechanisms.

By investigating the IVF-stem cells interface, presenting the reader with an extremely accurate ethnography of the stem cell derivation lab at Guy’s Hospital in London and analysing some crucial moments of the history of embryology, Franklin wisely retraces the process through which IVF has set the cognitive and practical grounds for transforming human reproductive substances into a tool, establishing a new paradigm of biology as a technology which has gained increasing support in contemporary UK and which promises to be crucial to upcoming health industry.

Franklin successfully illustrates how IVF is a technology that exists and is thinkable and practicable through the work of other technological apparatuses, such as the technology of kinship and of sex. The author navigates across feminist literature on IVF to examine how IVF is simultaneously produced by and produces technologies of sex and gender; and how IVF is called to artificially create the facts of life that are thought to naturally ground sex and gender themselves. The resulting picture is one where technologies of sex and gender, more than biology, appear as driving the process of naturalization of reproduction.

Biology displays instead its relativity insofar as IVF is used to produce and reproduce biological relatives while the very content of biology is both taken as an *a priori* and reinvented by IVF. IVF owns a paradoxical mimetic character, which makes it both ‘the same’ and ‘not quite the

same' as the process it has been created to imitate and substitute.

The ambivalences emerging from IVF understandings and applications are multiple and strategic. While they allow its perpetuation as a technology that reproduces gender and sexual norms, they also create biological relatives, and favour its affirmation as a creative technology that brings about unprecedented biotechnological relativities (i.e. the condition of being "a little bit pregnant").

From this perspective, kinship is also looked at as a technology which organises and facilitates human reproductive capacity as much as IVF is a technology of kin making. If the very concept of kinship is a technology designed to chart and discipline human reproductive substances and outcomes, the process by which these substances are "taken in hand" in the lab produces new kinship in a double way: it both introduces new kinds of biological relatives and new modes of being biologically related. The way in which Franklin uses the term "substance" in this book is a very productive one, which includes the specific reference to gametes and embryos as well as the more extensive one which recalls the outcome of "relationships between embodiment, sociality, identity, material objects, and technology" (p. 17). The technological creation of biological reproductive substances and the technological use of reproductive substances for different scopes (i.e. stem cells derivation) leads to a blurred and wider meaning of the concepts of biological relations and biological relatives. In this context, where reproductive substances are biotechnological products and their relationships with people, tools and scopes vary, potentialities exist for the emergence of new kinships.

The mechanisms that make the technology of kinship work in the field of IVF are spectacularized through the diffusion of the iconic image of the ICSI procedure, which represents "not only the logic of IVF, but the biological relativity implicit in making biological relatives. The relativity of the biological and the technical [...] in which substance and tool engage in the complex intercourse of merging with a purpose" (p. 254).

Aware of the aesthetic value of diverse IVF-related images and visual forms, Franklin also dedicates very captivating pages to bioartistic interpretations of IVF ambivalences and presents a very detailed ethnographic account of the works by Gina Glover inhabiting the transition spaces of IVF clinical encounters at the Guy's Hospital in London and offering an aesthetic extract of the combined experience of IVF by different actors.

Franklin conceives her book as a mosaic, where a number of ethnographic encounters, historical inquiries, bioartistic displays and theoretical sources provide the instruments for the development of a thoughtful, composite and extensive analysis of the landscape of IVF.

The argument is not a circular one. Instead, Franklin's acute and detailed analysis unfolds and expands along a spiral path, which navigates across different domains of IVF history to explore the socio-biotechnological circumstances of its development and the development of the socio-biotechnologies that have emerged in its presence. Such a

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distinct approach to the study of IVF as a lens through which the coproduction of biology and technology can be unpacked, owns the creative power of extending its hermeneutical validity beyond the boundaries of the past and present of IVF to the future of kinship.

The author retraces the multiple intersecting meanings of reproduction in its historical and eclectic manifestations and interrogates the dynamics of intellectual academic knowledge dissemination and reproduction. As much analytic and precise as evocative and inspiring, the skilful assemblages of ethnographic evidences with literary sources, the perceptive combination of Marxist, Foucauldian and Latourian conceptualisations with feminist approaches and the narrative juxtaposition of chapters that Franklin elaborates constitutes itself an original written reproductive formula which develops along complex and non-linear trajectories.

This book constitutes a reference for all those who approach the study of technology or kinship and is inescapable for those who adventure into the intersections between these two concepts.