Hannah Landecker is an Associate Professor in the Department of Sociology at UCLA and a member of CSW's Life (Un)Ltd working group. She is a historian and sociologist of biology and biotechnology whose work on cell culture, microcinematography, and metabolism draws on and contributes to issues central to feminist science studies.

Q & A with Hannah Landecker

Can you tell us a little about how you came into the study of cells as a "technology" (of living matter)? Were you always interested in technology as a topic? Was your interest in life sciences more broadly at first with technology a later interest?

No, I was not always interested in technology as a topic. I was interested in cells. I wrote my dissertation in the 1990s, when there was an overwhelming focus in life sciences on genetics and genomics, and a corresponding emphasis in history of biology and science studies on critiquing reductionism or resisting the cultural narrative of genetic essentialism, by studying genetics and molecular biology. I must admit that I was never very interested in genes, genetics was my least favorite part of biology, and the field seemed pretty crowded, so I decided to go in a different direction, which was to ask about the twentieth century history of cell biology. I am sure I was influenced by the growing interest in stem cell biology, but at the time, I thought it was just me—I'd studied cell and developmental biology as an undergraduate, and I thought it was my thing. Of course, it turned out to be a powerful new direction that life science was going at that time, which was fortuitous in terms of timing for my book. The question of technology arose naturally, so to speak, from the study of cellular life in the twentieth century, which was increasingly life in vitro—living cells cultivated through tissue culture technology. I stumbled across the fact that many tissue culture practitioners used time-lapse micro cinematography in their work, and this too was not my intention—I'd never been a film scholar—but it was impossible to ignore the fact that in vitro life was constituted in large part through the imaging technologies developed to observe that life. The visualization of cellular life over time literally fed back into the technologies used to cultivate that life; scientists realized that cells ingest their media all the time, and so they changed the way they circulated and constituted that medium—the medium of film and the

nutrient media of cells were highly co-constituted. From there, it has become a kind of abiding interest, in the question of how we are all rather "in vitro"—in that we live in the technological milieu of our own making.

How has the study of either gender and feminism entered into your past work on tissue culture or your newer work on metabolism? What feminist thinkers are you currently reading or had a huge influence on you?

I was lucky enough to start working at a time when a set of accomplished scholars had done the work to bring gender and reproduction into view as an important empirical site of inquiry, particularly in history of science, science and technology studies, and medical anthropology and sociology. Anthropologists, historians and scientists such as Rayna Rapp, Sarah Franklin, Donna Haraway, Anne Fausto-Sterling and Evelyn Fox Keller—to name a range across these various fields, had laid the groundwork for the critical feminist study of life science and biomedicine—and in a way I think I felt freed to study something that wasn't so overtly concerned with women or eggs or sex, per se. For example, I went into graduate school thinking I would perhaps study the Canadian politics of reproductive technologies but pretty quickly realized that I was more interested in other things—other things that at the first impression might seem to be far removed from questions of gender, such as cell death—and that was fine in part, I think, because so much important work had already been done, and I could take the tools and the methods and the mode of attention (which is often how I like to think of feminist science studies) to other parts of twentieth century life science. I was also influenced, in graduate school, by taking classes in literature with Barbara Johnson and by her thinking about difference in her books A World of Difference, The Critical Difference, The Feminist Difference, The Wake of Deconstruction, *and* Persons and Things, *which came out of the class I took. That said, there have been plenty of comments, both in reviews and in person, to the effect that my work is overly obtuse on questions of race, class, and gender; so, whether I speak to—or use the tools of—gender and feminism in my work or not depends on your perspective. I am interested in biology, and biology has not always been accorded much of a place in feminist scholarship, except in the rejection of biology as the ground for gender or other essentialisms—this is the point that is at the center of Elizabeth Wilson's work, which I always learn a great deal from. With Wilson, I believe that engaging with science, both its history and its contemporary form, is not just a critical enterprise in terms of critiquing what science is or does, but can itself be an enormous resource for generating new theoretical work. And, indeed, that all the modern cultural and political theory that humanistic and social scientific scholarship uses or draws upon, always already "has a biology"—by that, I mean that historically and culturally specific scientific ideas and practices of the biology of life and the body are (more and less explicitly) intrinsic to any theorist you could name. This is not to say that this work is somehow cryptically derivative of the science of its times and can be explained by it, rather that this is another layer to add to how we understand cultural and political theory. An example: I am absolutely not the first person to say that Marx's writing is full of concepts drawn from his contemporary physiologists and chemists writing about metabolism. But understanding the material and historical specificity of the metabolism of Marx is an enormous—and I would argue an essential—tool for understanding the cultural and theoretical import of metabolic sciences today, as well as the explosion of discussions*

about the "new materialism" currently ongoing. I am not convinced, actually, that we have ever come to terms with the old materialism, or fully fathomed its consequences. I have become very interested, in my re-excavation of metabolism in science and culture in the nineteenth century, in the separation at that time of questions of nutrition and growth and questions of reproduction and heritability, as part of the drive to identify these processes as empirically quantifiable physico-chemical forces, not vital spiritual ones. For example nutrition gets attached to the biochemistry of the soma, while reproduction over time is located in the germ line in the 1890s—and the metabolic properties of life are seen as distinct from the historical properties of life. We are still very much living with(in) the heritage of these ontologies. So it might seem obvious that a feminist historian of science or medicine or a feminist science studies scholar would be more interested in reproductive hormones than in metabolic hormones (as indeed, so far, they have been), but actually the very distinction between a reproductive and a metabolic hormone starts to look very different when you realize that these two categories are not inevitable at all. I realize that it is not at all obvious at first how the study of arcane corners of nineteenth-century animal chemistry is relevant to the study of gender and feminism, but I hope that this work behind the scenes will contribute to ongoing discussions in feminist theory nonetheless.

If you were trying to convince a group of undergraduate students in Gender Studies why metabolism or epigenomics was of key importance to the study of women today or women of the past (given your penchant for the question "what are the implications of these findings for history), what would you say?

What I just said! But let me elaborate for the present. I work simultaneously on the now and the then. This is my style. I would also say that the life and biomedical sciences today are also very important in relation to gender studies because "health" is so central to cultural values today, particularly in this country. I got a fridge magnet in the mail the other day from my HMO, with a picture of a verdant mountain and a clear running stream and, in flowing cursive, the admonishment "Health is Wealth." It came with instructions to not use antibiotics unwisely and to not apply them to children unwisely. This idea of health as the central goal of persons and societies comes along with very distinctive contemporary narratives about who's responsible for whose health. At the same time, there is a huge amount of cultural, political, and scientific attention to metabolic syndrome and the biology of fat, to the work of responsible nonpolluting nourishment that is simultaneously supposed to be preventative and empowering (it's not enough to be well, as Carl Elliott has said, one has to be "better than well"). The scientific languages of epigenetics and metabolic science are and will be at the center of new social (and consumer-directed market) narratives of how we should care for ourselves and others, particularly during the so-called critical periods of pregnancy and early development. Biological reproduction and social reproduction are being thrown into new relation by scientific and experimental formalizations of social things such as air pollution regulations and parental care as biologically (epigenetically) formative for the next generation. Being able to think about this critically is not just important to the study of women today but to the practice of being a woman today.