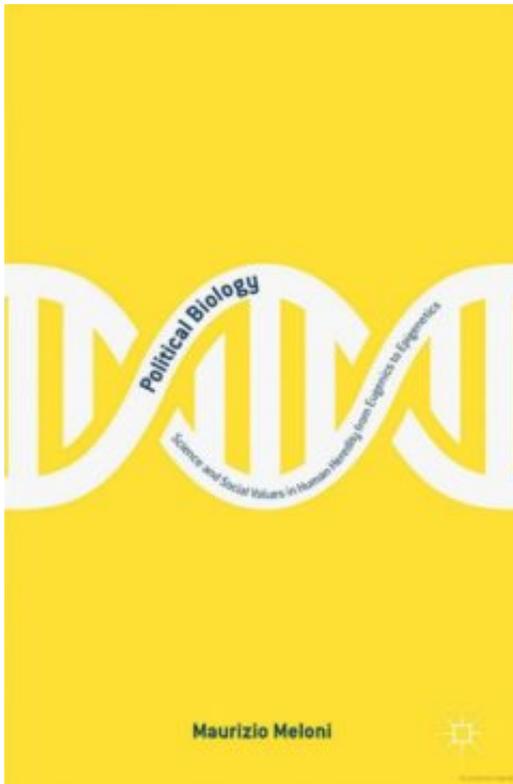


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Maurizio Meloni's "Political Biology: Science and Social Values in Human Heredity from Eugenics to Epigenetics"

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By Alan Goodman



Political Biology: Science and Social Values in Human Heredity from Eugenics to Epigenetics

[Maurizio Meloni](#)

[Palgrave MacMillan](#), 2016, 284 pages

In *Political Biology*, Maurizio Meloni, one of our most insightful social theorists of contemporary biology, guides us through heredity from the second half of the nineteenth century, through the twentieth “century of the gene” (Keller, 2000) and into the twenty-first century and the epigenetic present. Meloni expertly maps the consolidation of the paradigm of “hard heredity” that dominates most of the twentieth century.

The book invites us to explore the surprising postgenomic world: that is, the world of science that begins roughly after the completion of the Human Genome Project, a period marked by the everyday sequencing of genomes and, of most significance, the opening up of the genome and an increasing appreciation of the complexities by which genetic sequences relate to phenotypes.

Meloni, Senior Research Fellow in the Department of Sociological Studies at the University of Sheffield (UK), examines, on one level, how biological heredity “became modern” when the notion of the gene as controlling fundamental biological processes cemented into the dominant paradigm of biology. On a second level, Meloni investigates the implications of the rise, transformations, and potential decline of hard heredity for social life and political thought. He asks “What sorts of citizenship, personhood, politics and governmentality” are to be found with hard and soft heredity? (ix). What are the connections between views of heredity (and degrees of determinism) and political systems? And on a third level, Meloni highlights the epistemological split between the natural sciences and the social sciences that also became institutionalized during the twentieth century.

Meloni questions the structures of knowledge—particularly the separation of genetics from the social sciences—and the ways in which genetics pulled biology and medicine from the social sciences and social inquiry. He explores “the reconfiguration of the border between life and social sciences following the rise and fall of certain scientific views of human heredity.” (6). “[P]olitical biology,” he writes, “reopens closed connections between certain scientific statements and political values, connections that have been chopped off under the weight of historical stratification. This reopening seems particularly important right now, as a particularly neglected view of science—soft heredity—is being renewed” (17).

Meloni calls for a new social biology, a call I find particularly exciting and that readers of *Somatosphere* may as well.

In the first chapter, “Political Biology and the Politics of Epistemology,” Meloni outlines his goals. His book is a sort of archaeology of genetics, and here he explains his interest in heredity and the working distinction between hard and soft heredity. Briefly, hard heredity is the notion that genetic inheritance is a closed system, passed with fidelity from parents to their offspring. Soft heredity is less deterministic and predictable, and most important, allows for the possibility of environmental influences, from Lamarckian inheritance to epigenetic mechanisms. Hard heredity and soft heredity stand in for strong nature and strong nurture—that is, a closed genetics system as fundamental to human nature and a biology that is open to social influences.

One of the strengths of Meloni's treatment is that it provides a wide historical and philosophical view of the separation of two realms of inquiry: the biological and the social. In a sense, *Political Biology* is a strong and urgent appeal for a social biology, a concept Meloni has taken up in articles and shorter writings (2014). He urges us to consider that if biology is influenced by the unfolding of life events, early life and even the experience of one's relatives, as epigenetics suggests, how might this change our ideas about health and the body? What might be the political implications and the implications for rethinking human biology?

Chapters two through seven, the core of the book, present the history of heredity in an approximately chronological order.

In chapter two, Meloni outlines the rise of "heredity before hard heredity" and focuses on three key scholars: Francis Galton, August Weismann and Wilhelm Johannsen. He shows how hereditarian ideas based on a mixture of nature and nurture, as developed by Erasmus Darwin and Herbert Spencer, took definitive shape, even before the biomechanics of heredity were determined. However this soft hereditarianism was replaced by a complete separation of heredity and environment in which the seed was seen as more important than the soil, the key lesson of Galton and partly so of Weismann (43).

The dominant belief in seed over soil was key to the intellectual climate that allowed for the widespread acceptance of eugenics (chapter 3). What makes for fascinating food for thought is the juxtaposition of the expected connections between authoritarian politics and deterministic hereditarianism on the one hand (chapter 3) and examples that go against the grain on the other hand (chapter 4). Just as there are politically left Lamarckians and right Mendelians, Meloni tell us about their opposites: right Lamarckians and left Mendelians (94). The utter separation of heredity and environment had an unexpected emancipatory potential (both in terms of politics and knowledge-production) that we might perhaps understand only today when the legacy of this separation is once again challenged by epigenetics.

Alfred Kroeber, one of the founding fathers of cultural anthropology, provides an excellent example of left hereditarianism. Kroeber follows Franz Boas, his mentor, in his separation of culture from biology. Kroeber formulates the idea that culture is above biology, or "super organic." Although culture emerges from the organic (biology), it occupies a different domain or sphere, largely independent in rules and regulations from the organic, not reducible to the organic, and requiring a separate science. Here Meloni gives me an appreciation of what Kroeber was trying to do in freeing culture from biology, but as an anthropologist I would have loved to read more about Boas and his earlier struggles to integrate biology and

culture.

Boas's (1912) anthropometric work on immigrants and their offspring showed that types could change—they were plastic, thus providing an early example of soft inheritance. Working in the dominant paradigm of hard heredity, however, and at a time in which human biology could not be separated from race and type, Boas opted to separate the science of culture from the science of biology. It is noteworthy that he helped to open up heredity (against a tide of racism and eugenics) but ultimately moved politically to save culture and ceded biology to the hard hereditarians. Boas, some suggest, was the last biocultural anthropologist.

In chapters five and six, Meloni discusses the field of heredity after 1945 and the Second World War to the end of the twentieth century, a period marked by an ever-increasing pace of research in the new field of genetics. Beginning in the 1950s the gene, understood as a string of nucleotide sequences, takes on a physical reality and the central dogma of genetics—that information travels in one direction from DNA to RNA to proteins—is established. Toward the end of this period of study, the ambitious Human Genome Project (HGP) gets under way and full genomes of humans and other organisms are successfully sequenced. Questions remain, however, as to what genes mean and what genomes do.

At the press conference in June 2000 to announce the first successful sequencing of a human genome, Craig Venter and colleagues took the moment to announce that race is genetically meaningless. Still, scientists and writers today are far from uniform about whether “race” is to be found in the genes.^[1] UNESCO statements on race go forward and back. Whereas first William Boyd (1950) and others assumed that difficulties of defining races based on flexible phenotypes would be overcome by hard genetic information, Lewontin (1972) burst that bubble by showing that almost all known genetic variation is within so-called races. That race is not found in genetic differences raises questions about the sociopolitical roots of race (and class) differences in health and wealth. If differences exist—as they do—and they are not genetic, what is their cause? In other words, how does living in a racial and racist world get under the skin, and even into the genome? Instead of reducing culture to biology, culture is seen to cause biological differences.

Meloni welcomes us to postgenomics in chapter seven. Indeed, it is an exciting period and an unexpected (and welcome?) turn of events. As some predicted, the most difficult scientific work was to come only after the three billion letters of the genome, that “blueprint of life,” were revealed. How does the genome fold? What is the importance of all of those base pairs that do not code for proteins? And what activates and inactivates the

mechanisms by which gene sequences are transcribed?

The author, one of our chief chroniclers of epigenetics, walks us through the postgenomic present. Meloni outlines five ways of understanding postgenomics, all of which “decenter” the genome. He wonders how this opening up of the genome harks back to more than a century ago, the last period during which soft heredity was dominant. Indeed, epigenetics provides a modern molecular mechanism to show that early life events, and even events that were experienced by ancestors, can turn genes on and off. Meloni asks what the implications will be of the reopening of the genome to life experience.

In his last chapter, Meloni does not tell us what the future will hold. Instead, he offers a series of provocations. He interprets the signs that epigenetics might lead to a more social biology. It is less easy, however, to predict the politics of this more social biology. It could, for example, lead to a deterministic view of racial differences in health. Politics, Meloni shows us, affect the science of heredity and the science affects the politics, but the influences in both directions are only partial. Meloni writes: “Science and knowledge are the plastic objects of power, but so is politics the plastic object of scientific facts and expert claims. Therefore, power and truth, matters of fact and matters of concern, loop back to each other” (13). The relationship between political beliefs and systems on the one hand and the hereditarian perspectives on the other, Meloni says, has both an underlying pattern and a distinct flexibility and complexity. And perhaps this is a core lesson of Meloni’s important book: we should be aware of both the pattern and the breaks with the pattern.

This book should become a fundamental resource. It is of necessity a dense work and the reading can at times be slow (a copy editor knowledgeable about genetics could have made the writing more linear), but to break up the text, Meloni has incorporated some lovely declarative sentences. Meloni’s text references are utterly thorough: the bibliography of works cited takes up forty-three pages! Not surprisingly, his copy editors left out some references in the extensive ending bibliography. My last quibble is the hefty price tag. Let us hope that Palgrave sees the wisdom of issuing *Political Biology* in a more affordable paperback edition.

I have great admiration for what Meloni has achieved in *Political Biology*. His breadth of research and his depth of understanding are impressive. The scope is a huge one—the history of genetics—but even more important, Meloni presents a thoughtful analysis of the codeterminations of genetics and politics.

Political Biology may stand as a key moment not only in chronicling but also in helping to bring together genetics and social science and

reconfiguring the border between the life sciences and the social sciences.

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Notes

[1] The publication and responses to Nicholas Wade's *A Troublesome Inheritance* (2014) is an eye-opening example of just how alive the debate around race and genetic remains.

AMA citation

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