Review Essay

The changing space between politics and biology

Gillian Barker, *Beyond Biofatalism: Human Nature for an Evolving World*
Columbia University Press, New York, 2015, xi+162pp.,
ISBN: 978-0231171885

Maurizio Meloni, *Political Biology: Science and Social Values in Human Heredity from Eugenics to Epigenetics*
Palgrave Macmillan, Basingstoke, 2016, xi+284pp., ISBN: 978-1137377715

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The two books under review here attempt to untangle the complex web of relations that exist between politics and biology. Their approaches and objectives are somewhat different, but they share a common jumping-off point – the observation that a number of recent developments in biological thinking amount to a potentially radical re-shaping of its conceptual landscape; and both books are attempts to explore these changes with respect to the political, social, and ethical significance that they could, or should, have. They are essential reading for anyone interested in the political dimensions of the changing world of modern biological understanding.

Gillian Barker's *Beyond Biofatalism* is a work of philosophical critique with a normative orientation towards social possibility. It is a clear and insightful negotiation of the complex dynamics that exist between the interpretation of biological theory, political ideology, philosophical issues of fact and value, and social policy. The target of her critique is a particular understanding of the social implications of evolutionary and developmental biology. This understanding, which she aptly names *biofatalism*, is at once a conceptual framework for interpreting the biological and a generalised pessimism towards the potential for 'progressive' social change.

Biofatalism is something many will be familiar with. The idea is that reform agendas promoting, for example, more cooperative, peaceful, or egalitarian social arrangements might well be admirable, but they tend to ignore one important obstacle: Human Nature. There are fundamental facts about human beings, it is claimed, such as tendencies towards competition, inter-group aggression, the formation of power hierarchies, and the suitability of men and women for different

social roles, which are the products of our evolutionary history, and are thus 'hard-wired' into our constitutions, or 'genetically programmed'.

Our biology is therefore said to constitute restrictive conditions on the forms of social organisation that are possible or desirable. It's not that these basic structures of human nature are all powerful in every individual case (proponents admit there is scope for environmental influence on their expression), but it is argued that aiming to restrict or overcome them in any significant or long-term way is to attempt the wildly impractical and ultimately undesirable. A key source for such a view is Barker's main academic target, mainstream evolutionary psychology (see chs 1 and 2; see also e.g. Pinker (2002)).

Barker does not buy the pessimism. She argues that there is good ground for greater optimism, not just for political reasons, but crucially for reasons to do with the interpretation of biology itself, and its relation to thinking about human values and affairs. Over the course of the book, she deflates some of the core assumptions that lie behind biofatalism (many of which extend well beyond evolutionary psychology and its predecessor sociobiology), and shows how a number of conceptual and empirical developments within biological theory and related fields can be marshalled to begin the positive task of going 'beyond biofatalism'. The book aims to provide, as it claims on the front flap of its dust jacket, 'the perspective we need to understand that better societies are not only *possible* but *actively enabled* by human nature' (my italics).

The book has two main aspects: the critical deconstruction of biofatalism; and the taking-up of an alternative interpretive perspective, out of which some philosophical and practical implications are developed. The main message of the deconstructive task is that 'human nature' is much more flexible and open to change than biofatalism suggests. Of the many components of biofatalism that come under scrutiny in this book, perhaps the most important to a proper understanding of this message is the conceptual framework through which it understands organismic development. This framework revolves around the metaphor of the genetic 'programme' (AKA 'blueprint', 'recipe', or 'code'), and conceives of the becoming of an organism as essentially the unfolding or expression of an inherent form or set of developmental instructions that exist innately (p. 43).

'External' environmental influences are not precluded by the programme conception (as Barker rightly notes, it is not committed to a naïve genetic *determinism* (p. 3)), but they are seen as merely *contingent* factors that either assist or obstruct the unfolding of the organism's *essential* 'internal' form, which is the direct product of historical natural selection (p. 43). This view therefore understands development as 'constrained unfolding [with] limited malleability' (p. 68). The upshot is that, on the whole, development will express this form unless particularly unusual or extreme environments cause divergence from it (p. 44). Hence the attractively subtle structure of biofatalism: it's not that 'overcoming nature' is strictly impossible, it's rather that it would be very difficult to achieve

and maintain, and doing so would entail prohibitively large costs, in terms of resources or even human freedom and happiness.

Barker counters this framework by discussing a number of related pieces of evidence from biological science that have gained prominence in recent years. She highlights in particular: the radical context-sensitivity of processes of interaction between 'internal' and 'external' factors (pp. 45–50); the capacity of organisms to adaptively shape their behaviour and physiological functioning through co-ordinated sensitive response to environmental change (known as *active plasticity*) (pp. 53–62); and the more explicit involvement of the activities of living beings within and *on* their environments, known as *niche construction*, which involves complex feedback loops between individual and environmental context, including (crucially in the human case) the social context (pp. 62–66). It is factors such as these that are motivating major reformulations of biological thought in many areas, centring largely on the deflation of the special ontological status of DNA, and the wider distribution of developmental and evolutionary forces.

The implication of this opening-up of the scope of organic change is that the biofatalist reading of 'biology' ought to be rejected as inadequate and misleading. It leaves us far from certain that current social arrangements represent more or less the limits of human possibility. Where development is mediated by sensitivity, plasticity, and environmental inter-activity, 'multiple outcomes – possibly quite different from each other – are possible' (p. 47).

Barker offers an alternative interpretive schema incorporating the above ideas, which she calls the response perspective. She uses this conceptual aspect shift to bring some coherence to the indeterminate optimism invoked by the rejection of biofatalism. The positive outcome amounts to a more empowering way of viewing ourselves *qua* living beings, and of approaching the question of social possibility in this context. Instead of seeing the question of social possibility as an issue of the extent of 'malleability' around the edges of a rigid innate form, the response perspective re-frames it as a matter of the *range of human responsiveness* in different kinds of environment.

Importantly, Barker's move is *not* merely the replacement of a 'hard-wiring' metaphor with one of 'blank slate'. Both sides of this traditional dichotomy see organic plasticity as simply a matter of the degree to which an organism can be *passively moulded* by outside forces, and they therefore neglect the developmental and evolutionary significance of capacities for *active* responsiveness and environmental construction (p. 62). The empowering message of Barker's aspect shift is that our 'nature' is open to diverse developmental and behavioural possibility and, crucially, this openness is constituted by our capacity to sensitively and flexibly respond to the environment, and to thereby *positively shape both it and ourselves in novel ways*. It suggests a vision of the organic as *performative* of its own becoming, which entails an openness that can be harnessed for practical social change.

There are points, however, at which Barker seems to pull back from fully embracing this radical change of view. For example, most of her descriptions of human behavioural plasticity, especially in chapters 5–7, seem to be limited to the notion of 'alternative evolutionary strategies', which depicts plasticity as simply a range of alternative in-built behavioural repertoires linked to specific environmental cues by historical selection. This obscures the more radically *active* sense of plasticity as capacity for novel situated response. It is hard to see how 'alternative evolutionary strategies' says anything significantly different from 'programme with conditional branching structure' – a notion which she explicitly *contrasts* with her response perspective earlier on (p. 49). To put this another way: she is absolutely right that the blank slate metaphor misrepresents plasticity as passive malleability rather than as active responsiveness (p. 62), but does she in turn represent responsiveness in a way that merely re-affirms (a slightly more complex version of) the converse metaphor of hard-wiring or programming? If so, this works against her attempts at affirming the advertised 'imputation of *agency* that the metaphor of response carries' (p. 49, my italics).

A related tension exists between her criticism of the implicit normativity of the biofatalist view, with its distinction between 'proper' and 'defective' expressions of human nature (pp. 31–33, 42–45, 71–74), and an apparent temptation, especially later in the book (e.g. pp. 100–103), to essentialise the products of natural selection in a similar way. Her point in these sections is that each alternative developmental pathway is only one of a set of selectively evolved options; and thus, there is no *single* true form of human life. No doubt this point serves its purpose, but, again, the way it is framed potentially acts to re-validate the implicit normativity that she deflates so effectively elsewhere in the book, since this expanded picture of development involves merely the introduction of a *plurality* of 'proper expressions', not the rejection of the proper/defective dichotomy itself. I suspect that a satisfactory overcoming of these tensions would involve embracing the conceptuality of the developmental systems perspective, an approach that Barker mentions favourably, but seems hesitant to fully adopt (pp. 49–50; see also e.g. Oyama *et al.* (2001)).

Despite such tensions, Barker's critical endeavour is of great value for expanding the potential for dialogue between biological theory and political and ethical thought. It is also deeply pragmatic. As she says, the point is not to provide 'a feel-good story about human nature', but a perspective that can help to 'guide us in making effective political and practical choices' (p. x), to which end she closes the book by exploring a number of interesting possibilities for small-scale interventions in local social environments with the potential to catalyse socially progressive change.

Maurizio Meloni's *Political Biology* is primarily a historical work. However, despite spending most of the book looking towards the past, Meloni aims, much

like Barker, to elucidate the socio-political possibilities of the present by considering the significance of the contemporary opening-up of biological thinking.

He approaches this task through the lens of our understanding of heredity – the passing of characteristics from one generation to the next. This is closely related to other issues in evolutionary and developmental biology, and therefore provides a window onto the more general changes occurring in the life sciences. It is also a heavily politicised notion with great significance for the modern history of what Meloni calls political biology – the complex entanglement of the political world with the production of scientific discourse about the organic (see ch. 1 in particular).

Meloni produces a fascinating archaeology of the scientific and political life of the concept of heredity since the mid-19th century, and achieves the difficult task of showing why this history is not, as it were, of merely historical interest, but essential for a sophisticated critical approach to the present, and indeed the future.

The story can be divided into three movements. The first (ch. 2) covers the mid- to late-19th century, and deals with the emergence of the scientific concept of 'hard heredity'. This is the idea that the *acquired* characteristics of one generation cannot be passed on to the next through sexual reproduction. It is linked with the idea that separated from the *processes* of development is a special hereditary material (AKA 'germ plasm', 'genotype', and eventually the 'genetic code' of DNA) which remains unaffected by parental life history, sequestered from environmental influence. Any trans-generational change in form (i.e. evolution) that does occur is the result of the combinatorial effects of the unification of hereditary material from two parents, and/or random 'mutations'. It is only *this* variation that is filtered by natural selection; environmental pressures, and any associated changes that they induce *during* parental existence, have no direct effect on what 'a man brings with himself into the world', to quote hard-hereditarian pioneer Francis Galton (p. 43).

Before the work of Galton and others, heredity, evolution, and development were much more pluralistic notions. Of particular note are the influence of Lamarckian theories of evolution, in which 'soft heredity' – the openness of offspring to the direct biological influence of parental life history – was seen as possible, and the broader developmental or generational perspective in which this is best understood. Darwin, for one, was embedded in this intellectual context, and did not see his theory of natural selection as entailing an exclusively 'hard' conception of heredity – the relationship between these two ideas was not made monogamous until the 'modern synthesis' of the 1930s. To contemporary eyes, the hard heredity concept, and its associated dichotomies of nature/nurture, innate/acquired, and so on, can seem commonsense. Meloni shows that this conceptuality was indeed a radical innovation in the context of 19th century life science, and illuminates the political and social motives that helped produce and consolidate it.

The second movement (covered in chs 3 and 4) is more obviously political. One of the most prominent politicisations of biological thought in recent history is to be

found in the eugenic movements that flourished in first half of the 20th century – policy programmes for the 'improvement of human stock' by means of artificial control of human evolution. Meloni shows how scientific opinion and political motivation combined in a variety of ways in these movements, some of which are somewhat surprising.

Eugenics is most commonly associated today with what Meloni characterises as its hard-hereditarian/right-wing incarnation, in which certain vices and imperfections were seen as *innate* features of particular races, classes, and other groups of 'defectives', and policy was directed towards 'purifying' the nation. This took place through positive strategies to promote breeding between people deemed to be of superior stock, or through more negative means, such as the sterilisation or elimination of the 'inferior'. Such programmes existed in, among other countries, the UK, the US, and of course Nazi Germany. Conversely, there were agendas of the political left that appropriated theories of soft heredity to promote *social* reform as a means to improving the nation via inheritance of acquired qualities.

But Meloni is more interested in the lesser known, and more surprising, examples of political–biological alignment from this era that fall outside of this hard-right/soft-left schema. He shows how neo-Lamarckian views on heredity were also appropriated by eugenic agendas of the political right, the main difference with the above being that they saw the 'defective' groups as poisoned by the environment and habits of previous generations, and as incapable of being reformed through social regeneration, at least in the short term. On the other hand, hard-hereditarian eugenics also merged with left-liberal and even socialist politics. Meloni's prime example here is a branch of Soviet eugenics connected with American biologist Hermann Muller, for whom hard heredity did not imply 'enslavement to a genetic past but the capacity to shape the genetic future' (p. 121), through artificial selection of those with the traits best suited to catalysing transformation to world-socialism. This hard-hereditarian stripe in Soviet biology, along with its eugenics programme, was short-lived. It was superseded by a Lamarck-inspired perspective in the mid-1930s, which was soon made official doctrine.

Chapters 5 and 6 present the third movement, in which Meloni describes how the modern hard-right/soft-left schema crystallised after 1945, for reasons both political and scientific. As the USSR entrenched its official version of Lamarckism, the West moved towards a consensus built around the modern synthesis of hard heredity and natural selection, encouraged in particular by discoveries in molecular biology such as the chemical structure of DNA. Meloni also gives a fascinating analysis of the new form of political biology that emerged in the West in this period, which rejected eugenic styles of reasoning and attempted to naturalise liberal, democratic, and individualist ideas alongside consolidation of the neo-Darwinian modern synthesis.

The final two chapters leap into the present. One interesting aspect of the current opening-up of biology is that the hegemony of hard heredity is being put in question. This is in part suggested by the re-distribution of developmental and evolutionary forces that follows the deflation of the special status of DNA (as discussed above in reference to Barker). It is also more specifically implicated in certain findings of the new field of molecular epigenetics, on which Meloni focuses. This field studies the molecular machinery that regulates genetic 'expression', much of which is inherited via sexual reproduction, and – the evidence seems to be suggesting – much of which is open to influence from parental life history, and of undergoing functional changes transferrable across generations. Many take this as reason to suggest the return of soft heredity. Meloni's voice is amongst them.

But some are also suggesting that the return of soft heredity is a cause for optimism on the progressive side of politics. Meloni has an important message, and it is one of caution. The crux of his analysis in the central chapters of this book is that the commonly held assumptions of a natural association between environment-focused or soft-hereditarian views of biology and broadly left-wing and social reformist politics, and a converse association between hard hereditarianism, emphasis on the fixity of human nature, and broadly right-wing politics, are in fact contingent products of specific political–biological histories. These alignments are not *given* by the content of the science itself, they are not 'preordained', as Meloni says on a number of occasions. In the final chapter, he draws on the wisdom of the history he has presented to point towards ways in which a number of apparently soft-hereditarian epigenetic findings, to do with race, class, and gender, could indeed play into political agendas reflecting less savoury historical precedents.

This does not mean that legitimate arguments cannot be made to affirm some progressive potential of a political theory informed by biological thinking (Barker's book is certainly a candidate), but it does mean that there is no excuse for the complacent assumption that particular scientific perspectives will *automatically* align with particular brands of politics. Meloni himself, however, is only in the business of 'consider[ing] possible future directions' (p. 210), of revealing the range of political–biological alignments that *might* be taken up, he ventures not into the realm of positive politico-philosophical castle-building.

The main weakness of the book is that the choice to examine the contemporary space between politics and biology almost exclusively through the lens of *heredity* somewhat limits its scope. In the final two chapters, one gets the sense that the return of soft heredity is at times conflated with the re-emergence of a more general developmental/generational perspective. It may be true that both are indeed occurring, but they do not, I think, necessarily imply each other. It could be that interpreting the changing biological landscape primarily in terms of the latter, and seeing the question of heredity in this context rather than vice versa, would lead to a different outlook on the political–biological possibilities of the present.

References

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