

## CRITICAL NOTICES

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### THE FEMALE IN ARISTOTLE'S BIOLOGY

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In his recent book *The Female in Aristotle's Biology*, Robert Mayhew hopes to defend Aristotle against those who find ideological bias in Aristotle's biological views.<sup>1</sup> Mayhew's defence is on several fronts—his examination ranges over Aristotle's misidentification of the sex of bees, Aristotle's views on human reproduction, Aristotle's scattered remarks concerning anatomical differences between men and women (such as numbers of teeth, skull sutures, and softness of flesh), Aristotle's description of women as “so to speak, mutilated” (*hosper peperomenon*) males, and Aristotle's characterization of females across animal species as “softer and less spirited”.

Mayhew argues that “Aristotle's views about women and other females, however mistaken, were largely the result of empirical science—of reasoning based on observation—not of misogyny and ideological rationalization. . . . [T]he idea that his remarks about females were primarily the result of ideological presuppositions and rationalization—or, even worse, misogyny—is without foundation” (p. 116). That is, Mayhew hopes to establish that Aristotle did not, as it were, ‘cook the books’ and seed his biology with unsubstantiated claims meant only to bolster Athenian male power.

Mayhew offers the following test of whether or not a given claim is “ideological”:

- (a) the claim does in fact tend to promote a specific ideological agenda or justify social interests (i.e., interests of class, social position, gender, etc.);
- (b) the claim exhibits one of the following two features:
  - (i) it rests upon arbitrary or implausible assumptions and/or is supported by unusually bad arguments;
  - (ii) it conflicts with other fundamental principles held by the same thinker. (p. 7)

Further, on Mayhew's view, “ideological bias always involves evasion and/or dishonesty—psychological cognitive states that are under one's control. To

1. *The Female in Aristotle's Biology: Reason or Rationalization*, by Robert Mayhew (Chicago University Press, 2004). xii + 136 pp. \$28.00.

accuse a thinker of ideological rationalization is to imply that he could have done otherwise, that he could have come to other conclusions had he not evaded, been dishonest, engaged in rationalization, and so forth” (p. 5).

In determining whether or not a thinker of another period has relied on noticeably bad evidence or bad arguments, Mayhew urges us to be charitable. We cannot hold Aristotle to the same standards of evidence to which we hold contemporary biologists. Thus, Mayhew holds, we must assess Aristotle’s evidence and arguments “by his own lights”. Nonetheless, Mayhew holds that “[o]ne’s cultural context does not make objectivity impossible” (p. 5).

Mayhew’s study may help a reader unfamiliar with Aristotle’s biological works to have a greater appreciation for the subtlety and power of Aristotle’s early scientific efforts. When Aristotle’s biology comes to females, some have characterized it as “nonsense” or as “misogynist and silly”.<sup>2</sup> One of the strengths of Mayhew’s book is that it looks closely at the disputed texts and, thus, strongly resists over-simplification and easy dismissals of Aristotle’s biological work.

In Chapter 3, for example, Mayhew shows that Aristotle is capable of developing a sophisticated account of human reproduction despite the lack of a microscope, ultrasound, thermometer, test-tubes, centrifuge, as well as the lack of a modern understanding of genetics. On Aristotle’s account, the male parent contributes semen, which is a natural residue concocted from blood. The *katamenia* contributed by the female is also blood-based, but less concocted than the semen (727a 27). The male is able to concoct blood more fully because, Aristotle concludes, the male has more vital heat than the female. The action of the semen on the *katamenia* is similar to that of fig juice or rennet on milk (729a 9–14, 739b 20–27, 771b 21–27). The fig juice or rennet has the effect of forming solids in the milk. The semen, similarly, instigates the formation of the embryo through its vital heat. In this way, the semen contributed by the male parent acts on and enforms the *katamenia* of the female parent.

The above is an ingenious explanation for a process that Aristotle, of course, could in no way observe. And, as Mayhew shows, Aristotle is similarly inventive in other aspects of his biology, even where he is wrong on the facts.

Mayhew makes good use of historical, medical, dietary research and even sources in contemporary animal science to show how some of Aristotle’s errors were plausibly due to the kind of evidence he had at his disposal. For example, in Chapter 5 Mayhew shows how dietary deficiencies common during Aristotle’s time may have influenced Aristotle in concluding that the bones of female animals were softer than those of males (655a 10–14). And, in other cases, Mayhew shows how Aristotle made accurate observations but was mistaken in his explanations of these data. Aristotle correctly observes that men typically have larger brains than women (653a 28–29). But his explanation makes reference to what he sees as the primary function of the brain (to cool the blood)—whereas the heart is the primary locus for sensation and much of cognition. For Aristotle, men require larger brains since they

2. Respectively: Linda Redlick Hirshman, ‘The Book of ‘A’, p. 219; Martha Nussbaum, ‘Aristotle, Feminism, and Needs for Functioning,’ pp. 249–250, both papers in Cynthia Freeland (ed.) *Feminist Interpretations of Aristotle*, (Penn State University Press, 1998).

are hotter and have more blood. Unlike some nineteenth-century scientists, Aristotle does not hold that men's larger brain size is evidence that men are naturally more intelligent than women.

Elsewhere in Mayhew's book the explanations are less complete. In Chapter 2 Mayhew argues that Aristotle is not ideologically biased when he misidentifies female 'queen' bees as male 'kings'. Mayhew holds that Aristotle does not assume that animals must have male 'leaders,' and is willing enough to call the alpha-members of wasp hives "mothers" (*matera*) and refer to wasp-leaders in the feminine (HA 627b 31–33, 628a 1–2, 11, 17–18, 628a 30–628b 3). However, Mayhew here does not explain why Aristotle was mistaken when it came to bees. Why did Aristotle believe that bee-leaders were male?

In a Chapter 5 discussion of Aristotle's (mistaken) observation that women had fewer skull sutures than men, Mayhew tries to locate the problem in the evidence available to Aristotle—for example, that he observed effaced sutures in cadavers of pregnant women, that he had less opportunity to observe female corpses than male corpses (due to war deaths), etc. But it is at least as likely that Aristotle came to this explanation not through careful observation, but by inference from other theoretical commitments. At PA 653a 29–b3 Aristotle explains that male skulls have more sutures to allow for greater ventilation and cooling, necessary since males have greater vital heat. Defending Aristotle as an empiricist (of some kind) need not require us to think that he was always scrupulous in testing every claim made in his science. And, as Mayhew indicates, some of Aristotle's observations are just bizarre (for example, his observation that menstruating women can turn mirrors red). But we need not think that Aristotle was superhuman to defend him as an acute scientific observer.

These are minor problems with Mayhew's study. More serious problems lie with Mayhew's understanding of ideology. Mayhew's account assumes that a thinker must be epistemologically vicious if he is to count as ideologically biased. I believe Mayhew assumes this because he thinks being ideologically biased is an ethically blameworthy state and thinks that we cannot hold a thinker responsible for ideology unless the thinker is free with respect to the beliefs in question.

On the other hand, Mayhew is willing to excuse a thinker of ideological bias when culture effectively controls the evidence relevant to derogatory beliefs. Along these lines, in Chapter 6, Mayhew appears to regard Aristotle's claims regarding female character traits as "cultural residue" rather than evidence of ideological bias (pp. 105–113, Mayhew). Aristotle describes females as more docile, less spirited, and more sneaky and scheming than males. But Aristotle's remarks on female character traits do not count as ideological, on Mayhew's view, since Aristotle's culture would have over-determined these views (p. 6).

But how does one ascertain here whether a culture limits evidence in a way that will excuse a thinker for derogatory beliefs/claims? Mayhew holds that an Attic Greek of fourth–fifth-century BCE who thought that women were not capable of doing philosophy would be excused of ideological bias since the culture denies him relevant evidence to the contrary (pp. 5–6). But, on Mayhew's account, even a belief/claim such as 'women are inferior to men' does not seem to count as ideological. If believers only observe women in

positions of servitude or inferiority, it seems that Mayhew would hold such a believer “cleared of the charge of bias because of the cultural context in which he was working” (p. 5). Aristotle clearly believes that men, and not women, represent the best examples of human flourishing and achievement. If a belief like this is not ideological, it is difficult to see what belief could be.

It seems that, on Mayhew’s account, only the most hardened ideologue—the unregenerate sexist who knows that women are not inferior but propagates the myth anyway, for example—will count as ideologically motivated. But this is not a view of ideology that is widely shared. I doubt that epistemological freedom and limitation, or cultural influence and epistemological independence are all-or-nothing matters. I also doubt that ‘honest science’ or epistemological viciousness (evasion, rationalization, and wilful deception) are the exclusive options Mayhew suggests. Most would allow that thinkers might unwittingly subscribe to ideological beliefs; that thinkers might do so with some degree of epistemological freedom; and that such beliefs might serve to bolster dominant power relations even if thinkers do not recognize this fact.<sup>3</sup> In short, it seems that thinkers can hold ideological beliefs without engaging in wilful deception, evasion, or rationalization.

Mayhew focuses narrowly on the role of ideological interest in the formation of a thinker’s views. But, in many cases, a belief’s having ideological force seems to be more a matter of how the belief is related to other beliefs held by the individual thinker and to prevailing cultural views. Take Aristotle’s claim that males have more vital heat than females. On the face of it, this claim does not seem to have any ideological import. One can grant, with Mayhew, that Aristotle did not rely on “simply arbitrary or implausible assumptions” in forming this belief (p. 41). For Mayhew, this fact is enough to show that the belief is not ideological.

But seeing this belief in the context of Aristotle’s other views may make a difference. In *Parts of Animals* II.2, Aristotle explains that human beings who have more vital heat (as shown by hot blood which is also thin and clear) are those who are most naturally intelligent and courageous (648a 9–11). Thus, Aristotle concludes, males are superior to females (648a 12–14).<sup>4</sup> The claim that males

3. See here Charlotte Witt’s, Angela Curren’s and Cynthia Freeland’s discussions of ideology in a special issue of *Apeiron* devoted to the issue of politically-informed critiques of ancient works (respectively: ‘Ancient Philosophy and Modern Ideology: Introduction’, pp. 273–279; ‘Form as Norm: Aristotelian Essentialism as Ideology Critique’, pp. 327–364; and ‘Feminism and Ideology in Ancient Philosophy’, pp. 365–405, *Apeiron*, 33 (2000)). Mayhew’s account also leaves out this important feature of ideology—that ideology provides support for dominant power structures. On Mayhew’s account, it is enough if an ideological belief supports the interests of the thinker’s own race, class, gender, or other social group. But this does not represent a standard account of ideology. On a standard account, it would be possible for a thinker to put forward claims that support dominant power structures but work against his or her own race, class or gender interests. Marxists might diagnose such uses of ideology as the results of ‘false consciousness’. And, *contra* Mayhew, there is no reason to think that one must accept Marx’s apparent cultural determinism to think that this is an accurate characterization of ideology.
4. This textual evidence is discussed by Lange in ‘Woman is Not A Rational Animal: On Aristotle’s Biology of Reproduction’ (in Sandra Harding and Merrill Hintikka (eds.), *Discovering Reality: Feminist Perspectives on Epistemology, Metaphysics, Methodology and Philosophy of Science* (Springer, 2003)).

have greater vital heat than females, then, helps not only to explain different roles in generation for Aristotle but may also help to explain male superiority. And Aristotle's belief in male superiority both supports and is supported by the prevailing fourth–fifth-century BCE Greek belief in male superiority.

Mayhew holds that Aristotle's biology could have been used for ideological purposes—for example, by granting men greater parental rights than women—but “[t]he view itself has no ideological implications” (p. 51). But I am not confident that we can non-arbitrarily isolate some of Aristotle's biological claims from other claims as Mayhew suggests. I am not confident, for one, that Aristotle's biological views are unrelated to his psychological or political views. Certainly, Aristotle himself believes that his biological, psychological, and political views are connected in interesting and significant ways.

The main task of Mayhew's book is to clear Aristotle of the charge of ideological bias in his biological works. But Mayhew cannot successfully accomplish this task because his account of ideology is insufficient and appears to have fatal problems. A more nuanced and deep discussion of ideology and ideological bias would surely be a desirable addition to this book.

The problems with Mayhew's account of ideology give the impression that he is talking past many of those who practice ideology critique on Aristotle's works. This impression is reinforced by Mayhew's tendency throughout the book to rely on isolated remarks taken out of context to represent the wide sweep of feminist work on Aristotle. In Chapter 3, for example, Mayhew argues against two critiques of Aristotle's reproductive biology—one interpretation according to which the female is simply the “incubator” for the developing embryo,<sup>5</sup> and one according to which the female only provides “inert matter” for the male's form.<sup>6</sup> I agree with Mayhew that neither of these represents the correct interpretation of Aristotle's reproductive biology.<sup>7</sup> But neither is the best evidence of feminist work on Aristotle's biology. The works Mayhew cites here are more than 20 years old, neither is written by a philosopher<sup>8</sup>, and neither aims to be an in-depth treatment of Aristotle's biological views.<sup>9</sup>

5. This view seems to find expression in Aeschylus' *Eumenides*. There Apollo testifies in court that the mother is not the true parent of the child, but only a “nurse” (*trophos*) for the planted seed. Many commentators have taken note of this passage as providing some rationalization for the denial of parental rights to women and other inequalities in Attic Greece. Aristotle appears to attribute a view of this type to Anaxagoras at *GA* IV.1 763b 30–764a 1. According to his characterization of the view, “the seed comes from the male, but the female only provides a place”.
6. Mayhew cites a quote from Eve Keuls's book *The Reign of the Phallus* (University of California Press, 1985) where she apparently attributes the Apollonian view to Aristotle: “[Aristotle] sought to prove scientifically not only that the male is superior to the female, but also that the female, despite her nurturing of the fetus during pregnancy, has no genetic input into procreation, thus making the father the only real parent” (p. 145, Keuls). Mayhew also produces a similar quote from Jean Bethke Elshtain's *Public Man, Private Woman* (Princeton University Press, 1981) where she goes so far as to attribute to Aristotle the view that the male deposits a “homunculus” into the uterus of the female.
7. On Mayhew's own interpretation, the female's material contribution to the developing foetus is “rich” and not “inert”. The female is responsible, in part, for the soul functions of the developing embryo (particularly, its nutritive capacities) as well as some of the embryo's physical characteristics. However, some feminist interpreters have focused instead on Aristotle's view that the distinctively human soul functions are only due to the male parent.

Such stray remarks do not accurately represent the large and varied body of work done by feminist interpreters over the past 20 years. While some of this work is represented in the book's bibliography, there is no sustained engagement with the lines of argument developed in some of the more in-depth critiques of Aristotle's biology. And this is unfortunate since such work provides many examples of thoughtful, well-researched, and fresh interpretations of Aristotle's biology. These often go well beyond the 'incubator' or 'inert matter' sort of remarks on which Mayhew relies to dismiss feminist interpretations of Aristotle's reproductive biology.<sup>10</sup>

And, it is hardly the case that there is a feminist orthodoxy on Aristotle. Rather, feminist interpreters—much like 'regular' interpreters of Aristotle—frequently disagree on points of interpretation both large and small.

Ultimately, it seems that Mayhew runs afoul of his own standards of charitable interpretation in *The Female in Aristotle's Biology*. In Chapter 7 Mayhew roundly excoriates feminist interpreters of Aristotle in general for being "careless" (p. 116), "biased", "hostile", and for presenting a "warped picture of Aristotle [that] supports [their] agenda" (p. 117). Sloppy scholarship is irksome to those of us who do this sort of thing for a living, so I am sympathetic to Mayhew's impulse to defend Aristotle against careless misreadings. But Mayhew accuses feminist commentators not merely of being mistaken or cavalier—rather, he charges them with intellectual dishonesty and with being ideologically motivated themselves (p. 117). In Chapter 1, Mayhew urges caution in ascribing ideological bias to a thinker: "it is mistaken to assume that, whenever we encounter faulty reasoning, the author of an argument in defense of a position we reject must have been motivated by some kind of bias" (p. 9). I agree. On what basis, then, does Mayhew impugn the intellectual credibility of Aristotle's feminist critics, tarring them all with the same brush?

8. Keuls is a classicist, and Elshtain is a political philosopher/intellectual-at-large; as such each may be excused if she is inattentive to the philosophical details of Aristotle's often obscure biological views.
9. Elshtain's book is an overall study of the influence of the demarcating of the private and public spheres as gendered in Western political thought. Keuls's book is a study of sexual politics in Attic Greece which particularly focuses on phallic and sexual representations in art and literature. Keuls's book was extremely important in bringing a consciousness of gender and the workings of gender to scholarship on ancient Greece. It is an unfortunate disservice to this otherwise excellent and wide-ranging study to pull out one mistaken point of interpretation as representative of the work as a whole.
10. The collection *Feminist Interpretations of Aristotle*, edited by Charlotte Witt and Cynthia Freeland, for example, provides several examples of solid work on Aristotle (papers by Deborah Modrak, Charlotte Witt, and Barbara Kozziak, most notably). Several other collections of feminist scholarship also include work on Aristotle. See, for example, *Discovering Reality: Feminist Perspectives on Epistemology, Metaphysics, Methodology and Philosophy of Science*, and Bat-Ami Bar (ed.), *Engendering Origins: Critical Feminist Readings in Plato and Aristotle* (State University of New York Press, 1994). For papers on Aristotle's reproductive biology in particular, see: Lynda Lange's 'Woman is Not A Rational Animal: On Aristotle's Biology of Reproduction' and Nancy Tuana's 'Aristotle and the Politics of Reproduction' (in *Engendering Origins*). These collections and articles highlight a variety of approaches to and positions about Aristotle. Moreover, works like these give the lie to the claim that feminist interpreters have not treated Aristotle's biology with sufficient attention or care.