



THE IMPORTANCE OF BIOLOGY TO PHILOSOPHY: THE CASE FOR PHILOSOPHY OF BIOLOGY

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Abstract: This paper argues for the importance of issues raised by biology to the practice of philosophy. At first blush this may be obvious to some when they think of bioethics or medical ethics. The overwrought issue of abortion immediately comes to mind. However, there are other issues that bear directly on philosophical discussion. As a field of study, this is called philosophy of biology, involving discussions between scientists and philosophers. Philosophy of biology features works of scientists and philosophers from the issues stemming from evolution, sociobiology, the human genome project and creationism. Difficulties in recognizing such a field arise for those who think that there is an unbridgeable gulf between science and philosophy. Many of those who engage in philosophy of biology do not think of such a gulf, for many of them are naturalists. Naturalism is the view that philosophy is continuous with science. While naturalism is not an unproblematic view and methodology, it has flourished in philosophy of biology. Philosophers, insofar as they are not naturalists, would probably argue the importance of philosophy *to* biology. Arguing for the importance of philosophy to biology may be satisfactory to traditional philosophical discussion. But what of problems stemming from issues found in biology? Should philosophers be ignorant of these issues? Historically, the American pragmatists Peirce, James and Dewey recognized the significance of Darwin. Unfortunately, mischaracterizations of their thoughts proved to downplay their contributions to philosophy. Thankfully, recent philosophers like Sober, Kitcher and Godfrey-Smith has led to recover this significance. The scientist Mayr is an important figure for this paper in that he argues for the autonomy of biology from the other natural sciences. The autonomy of biology is vital in that one usually thinks of philosophers and physicists as dealing with similar issues, what about the issues raised by biologists?

Key Words: philosophy of biology; biology; pragmatism; naturalism; Mayr

1. INTRODUCTION

Many of the issues raised by scientists like Hawking and Dawkins were formerly raised by philosophers. Hawking's pronouncements regarding the universe and its origins may be thought of as addressing the nature of reality, what philosophers call "metaphysics." Dawkins's attacks on organized religion and the existence of God easily belong to philosophy of religion. It is perhaps easier to point out to the general public thinkers like Hawking and Dawkins rather than their contemporaries in philosophy. Philosophy, it would seem, has lost some of its significance.

Yet, it can be pointed out that the very idea that these issues are "philosophical" also shows that the significance is not totally lost. Though the question remains what philosophers should do about this situation. Any group of individuals can keep to themselves and their concerns. Some philosophers have sought to insulate themselves from the natural sciences in order to retain the purported significance of philosophy. The idea here is that philosophy has its own set of issues and problems that only *seem* to overlap with science. One possible upshot here is that scientists cannot truly address philosophical issues (see for instance Nagel, 1979, 1995, 1997). That scientists purportedly cannot truly address such issues is now a theoretical and methodological point, not just a sociological one.

This paper argues for the importance of issues raised by biology to the practice of philosophy. Such a practice can already be found in what is called "philosophy of biology." Philosophy of biology, in general, is a field that goes against the view that scientists cannot address what are usually called philosophical issues. It can easily be pointed out that *both* philosophers and scientists work in this field (Godfrey-Smith, 1998; Keller, 1998; Kitcher 1998; Mayr, 1999, 2004; Oyama, 1998; Hull and Ruse, 1998; Sober, 1998, 2011; Sterelny, 2001). What can be misleading is the term "philosophy of biology" for it may the impression that *only* philosophers should delve into this field. If philosophy of biology features works issues stemming from evolution, sociobiology, the human genome project and creationism, then scientists (especially biologists) are the ones to turn to. It is not just the matter of expertise, but rather of the notion that these issues sprung up from the work of scientists. What if the work of these scientists comes up with something that up till now is unthinkable? Here, we are reminded of Darwin (1999), who came out in 1859 with his *The origin of the species*. The theory of evolution has spawned debates into the nature of science and the existence of God. That the status of evolution is an *ongoing* debate is not just a testament to its influence, but also to the fact that it was an unthinkable or novel idea.



If anything, the example of Darwin supports the argument of this paper. Historically, the pragmatists (Peirce, James and Dewey) were some of the few who had take note of evolution (Dewey, 1997 p. 1-19; James, 1981 p.52; Kuklick, 1981, p. x; Lavine, 1993, p. 8; Menand 2001, 141-3; Rorty, 1991a; 1991b; 1999, 19, p. 263-4; 2007, p. 27, 188-9, 193; Seigfried, 1993, p. 122; Smith, 1980, p. 190). Unlike many philosophers then and now, these pragmatists were more welcoming of seeing the possible links of science to doing philosophy. A stronger formulation of this is called naturalism, the view that philosophy is continuous with science. The next section will discuss naturalism and the possible reasons why some philosophers will resist the argument of this paper.

2. NATURALISM

Generally, the researchers in philosophy of biology are naturalists. By investigating the positions of biology, in such varied subjects as the theory of evolution, the Human Genome Project, cloning etc. it is already acknowledged that philosophy is continuous with science. While the issues are called philosophical (one may think of “human nature”), they are framed thru the research of biology. It would be merely an armchair exercise, if the Human Genome Project was a premise in a fiction book. We can even grant that, perhaps these topics may have been thought out before by highly intelligent and imaginative authors, and these can provide insights into these situations. But the significance of the previously mentioned issues does not have the same status as that of a novel. One will now have turn to those with expertise in such issues; or to those wherein new possible situations may arise wherein one has to philosophize anew.

Difficulties in recognizing philosophy of biology arise for those who think that there is an unbridgeable gulf between science and philosophy. Philosophers, insofar as they are not naturalists, would probably argue the importance of philosophy *to* biology. This can also be the result of being misled by the term “philosophy of biology” and then thinking that only philosophers should do this. This can be supported by the view that philosophy is foundational with respect to culture in that it deals with the nature of knowledge (Rorty 1979). In effect, philosophy becomes the tribunal by which knowledge from other disciplines is judged.

One may make the observation of some of the insular concerns of philosophy. But then again one may point out to the other insular concerns of other disciplines. This kind of insularity necessitates specializing in an area of study. Therefore, it would appear that, like many other disciplines, philosophy must trouble itself with its insular concerns. However, it is difficult to argue that this insularity excuses philosophers of neglecting another discipline, *especially* if it has implications to some philosophical issue/problem. Once again, Darwin comes to mind. Much of the resistance to accepting his theory of evolution comes with what some view as an unacceptable view of human nature.

The upshot of common descent (Darwin, 1999; Mayr, 2004, pp. 37, 87) was that humans were as much a part of nature as the apes were. Agassiz vehemently argued against Darwin also on similar grounds. Agassiz (Menand, 2001, p. 104-5) found the theory of evolution reprehensible in that it would go against his polygenism on race. To be brief, the purported science that supported racial segregation will be found a charade. Agassiz shared with Cuvier and Morton the view that regarded Caucasians as superior. . *If* polygenism were true, then some races would have innate qualities and aptitudes that would render other races inferior. Agassiz and others saw that no race would be *inherently* superior or inferior *if* evolution was a viable scientific theory. Notice how the issue of human nature is affected by the theory of evolution.

Of course, one can easily point out that the naturalistic view common to many philosophers of biology and Darwin rules out combining supernaturalistic beliefs in forming a scientific theory (Mayr, 2004 p. 86-7). This practice of combining these beliefs was done by Agassiz, and here one can point to another way philosophers will be resistant to the theory of evolution, and by extension philosophy of biology. That is, if one thinks of theistically-inclined philosophers as thinking of science as lower than their theology. Another position that can come out is the outright denial of the supernatural and with it God. However, it should be pointed out that there were scientists, like Asa Gray, who sought to reconcile Agassiz and Darwin (Menand 2001, p. 125).

It appears clear now why naturalism is a position that at least one has to contend with. It is not within the scope of this paper to show the nuances of naturalism. For instance, the pragmatists (Peirce, James and Dewey) are considered naturalists in that they were more open to addressing Darwin and even acknowledged his influence.

But some of the difficulties of adopting naturalism were shown, specifically to some issues that have been perennially called philosophical as they have been affected by Darwin's theory of evolution. The question remains of why biology *specifically* would affect the practice

of philosophy. The theory of evolution is just one instance of this and the next section follows Mayr's (1998, p. 8-21; 2004, p. 21-37) position in arguing for the autonomy of biology.

3. THE AUTONOMY OF BIOLOGY

The autonomy of biology is a position that supports the contention of this paper. The common view is that philosophy and physics go together. There is ample support for this if one remembers the Greek pre-Socratic philosophers and their concern for the nature of reality. Of course one can point out that Aristotle, apart from this concern, also had concerns that one would call now biological. However, questions regarding the nature of reality usually lead to questions of universal laws of nature and for this one usually consults physicists.

Reductionism supports the view that one turn to physicists for the laws of nature (Mayr, 2004). The pattern of reasoning of one form of reductionism will illustrate this:

Biology studies organic phenomena and all the other phenomena related with it.
These phenomena and all the others related are composed of compounds.
Compounds are studied by chemistry.

Therefore, biology reduces to chemistry.

Compounds are made up of particles.
Particles and all the other phenomena related with particle are studied by physics.

Therefore, chemistry reduces to physics.

If we accept this kind of reasoning then it is apparent that biology is not an autonomous discipline. Mayr (1998, 2004) argues against this kind of reasoning for many of the ideas that are used in physics are not applicable to biology. Here (Mayr, 2004, p. 26-8) are some of them:

1. Essentialism (Typology)
2. Determinism
3. Absence of Universal Laws

Reductionism is actually the third idea, and Mayr comments that this is not applicable to biology in that it would hinder the understanding of a complex biological system Mayr (2004, p. 72) argues, "No one would be able to infer the structure and function of a kidney even if given a complete catalog of all the molecules of which it is composed."

By essentialism, Mayr refers to the philosophers and scientists who were looking for the ultimate stuff of nature. Mayr (2004, p. 27) contends that this position is "unable to accommodate variation and has given rise to a misleading conception of human races." As was

noted previously regarding Agassiz's fears of Darwin being correct, Mayr says that essentialism leads to racism.

By determinism, Mayr claims that the methods of Newtonian physics have no room for chance. Variation and chance phenomena are part and parcel of biological study. Taking into account reductionism, essentialism and determinism and his comments on these ideas, Mayr (2004, p. 28) is doubtful about the status and application of universal laws in biology. It is not that Mayr is denying that universal laws outright, but that such an *approach* would frequently lead to misunderstanding of biological phenomena.

Mayr's point is that much of philosophy of science, in discussing issues stemming from progress in the biological sciences, is mistaken in taking the framework of physics. From this paper's perspective Mayr's supports the importance of taking the issues of philosophy of biology seriously and primarily on its own terms. While this is beyond the scope of this paper, part of Mayr's point was anticipated by James and Dewey. But this is not a surprise if one takes note that they took Darwin's ideas and their implications seriously.

4. CONCLUSION

The second section discussed briefly naturalism and some of the possible reasons that philosophers and other thinkers might be resistant to this paper's contention. It was shown that naturalism is at least a position one has to contend with (for instance with philosophical issues like human nature). The second section's example was the reaction to Darwin's theory of evolution and the philosophical issues that are implied with it. Many of the negative reactions to Darwin are analogous to the resistance of philosophers to taking the issues from biology seriously, even if such issues might overlap with the philosophical.

The third section discussed some of Mayr's views and arguments regarding the autonomy of biology from the other natural sciences. There are ideas in physics that are not applicable for biological study, and that biology should be taken primarily on its own terms. That biology is autonomous buttresses the claim that philosophy of biology is an important field.

Many fear that embracing naturalism would entail essentialism and determinism about human beings. If Mayr is correct in his arguments regarding the autonomy of biology, then there is at least one other field that goes against essentialism and determinism. That field is biology. Philosophy and philosophers should therefore take note of biology and philosophy of biology.



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