

COMMENTARY ON JOHNSON

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ABSTRACT

In my response to Monte Johnson's essay I raise questions about the extent to which Aristotle's notion of spontaneity mirrors the Hippocratic. Some Hippocratic uses of the term 'spontaneous' are deeply incompatible with the use Aristotle makes of it, and the occasional points of contact between the Hippocratics and Aristotle are relatively trivial. I conclude that these questions limit the extent to which we can look to the Hippocratics for insight into Aristotle's philosophy, which, some have argued, is inconsistent on issues pertaining to spontaneous generation.

I. Introduction

I confess to some sympathy for the historical thesis that Aristotle's philosophy of nature is indebted—perhaps heavily—to his knowledge of medicine. The biographical evidence cited by Johnson in his paper is circumstantial, of course, but nevertheless suggestive.¹ And Aristotle betrays an obvious interest in medicine with numerous examples and arguments that depend on medical ideas, including his well-known remarks on medicine, ethics, and precision in the *Nicomachean Ethics*.² Aristotle seems especially fond of recalling the "fact" that patients sometimes recover spontaneously from their diseases, and this would certainly have been accepted as fact by many, if not most, of the writers responsible for the texts attributed by the tradition to Hippocrates. Thus, one might speculate that Aristotle's debt to "Hippocratic" medicine is heavy indeed, though I would caution against making too much of the apparent similarities between Aristotle and the Hippocratics on this score. In what follows, I will begin by raising questions about the extent to which Aristotle's notion of spontaneity mirrors the Hippocratic use of the term. I will end by suggesting that these questions limit in turn the extent to which we might lean on the Hippocratics to resolve problems in Aristotle's philosophy.

¹ This essay was written and presented as a response to the original draft of Johnson's paper for BACAP, from which the version printed in these proceedings may diverge.

² E.g., *EN* II 2, 1104a3-10. When quoting passages from Aristotle, I will follow Johnson in using translations from Barnes 1984.

II. *The Hippocratics on Spontaneity*

Johnson is certainly correct that, according to at least one Hippocratic writer, nature does things spontaneously:

Nature spontaneously knows how to do such things (ἡ φύσις αὐτομάτη ταῦτα ἐπίσταται). When a man is sitting it is a labor to rise; when he is moving it is a labor to come to rest. And in other respects too nature is the same as the medical art (καὶ τὰ ἄλλα τὰ τοιαῦτα ἔχει ἡ φύσις ἱητρικῆς). (*Vict.* 1.15.2 Joly=6.490 L.)³

Nature takes certain curative measures spontaneously (αὐτομάτη), and thus is like the medical art, which aims to cure. But the author's point is that nature, specifically the human body, strives on its own to maintain some sort of equilibrium, so that here "spontaneously" means simply 'without external intervention, especially human intervention.' Note especially the language of intentionality employed. Nature "knows how" to heal, and while it is unclear just how far we are meant to take the metaphor, it is clear that the language is more than a poetic turn. The implication is that nature in this case exhibits a teleological structure. Thus, "spontaneous" does not refer to a special way that nature causes things to happen contrary to the normal course of events—surely not to a way that nature causes things with a highly attenuated final or formal cause, or without such a cause at all. For the author of *de Victu*, the spontaneous is always natural, and by definition; there is no sense in talking about spontaneous artificial causes, though to Aristotle such a category makes perfect sense: it is what he terms "luck" (τύχη) (*Physics* II 6, 197a37-197b18). Aristotle's notion of spontaneity, at least as he lays it out in his *Physics*, is compatible with human intervention, though the Hippocratic's is not.

But even if the author of *de Victu* had agreed with Aristotle on this point, there is the further question of whether *de Victu* is representative of the Hippocratic corpus as a whole, and then whether the corpus is a reliable gauge of the views current in medical circles at the time. I am convinced that the view of spontaneity articulated in *de Victu* is not in fact representa-

³ Hippocratic writings will be referred to using the abbreviations established in LSJ. Each citation will include, when possible, the passage's location in the Budé edition (by book, chapter, and section or line as applicable) and will identify the editor of the particular Belles Lettres volume. The parallel location in Littré's collection (volume and page number) will be given, as well, indicated by the letter "L." (For the sake of ease, when discussing a passage directly quoted by Johnson, I will use his translation, which often follows the Loeb edition. These lines from book one of *de Victu* were quoted in Johnson's draft but omitted from his revised version. They are in fact the continuation of the passage quoted.)

tive of the corpus, since most Hippocratic writers would not allow that the body has a natural tendency to maintain equilibrium. The passages from *VM* cited by Johnson are of real interest here, but again they constitute what I take to be an exception to the Hippocratic rule.

Generally, Hippocratic writers attribute a range of phenomena to spontaneity, and Johnson cites many of these. But it is far from clear that in each case the term is being used in the same way or to the same end. The basic meaning of *to automaton* is 'by itself' or 'on its own.' Diseases may commence spontaneously. They may remit spontaneously. Symptoms may appear or disappear spontaneously. There's no doubt that, in all these cases, spontaneous events occur without human help or prompting.⁴ But that does not exhaust the term's force, as indicated by the fact that the spontaneous is often contrasted by Hippocratic writers with events that occur with a *πρόφασις*, which is an item of Greek medical terminology with special causal import. What exactly *πρόφασις* means has been a matter of some controversy, but it is usually glossed as 'apparent cause,' and a look at its occurrences in the corpus shows that it is often applied to the proximate triggering causes of a disease.⁵ Two examples from *Prorrh.* 2 will suffice to illustrate:

If the spinal marrow is diseased either from a fall, or from some other *πρόφασις*, or spontaneously (*ἀπὸ αὐτόματου*), the person loses control over his legs, so that when touched he does not feel it, and loses control over his stomach and bladder, so that for the first few days he passes no stool or urine, except under compulsion. (9.42.9-13 L.)

A little better than these are such [pupils] as are clearly smaller or broader, or are angled, whether such conditions arise from a *πρόφασις* or are spontaneous (*αὐτόματα*). (9.48.4-6 L.)

In short, when something happens spontaneously, it happens 'for no apparent reason' or 'with no obvious cause,' where human intervention would count as only one of the many possible obvious causes or apparent reasons. But this sort of description of a disease's onset is—perhaps frustratingly—vague. If a disease comes on spontaneously, it may do so either because its causes are not apparent to the doctor (the *epistemically* spontaneous) or because it has no causes at all (the *metaphysically* spontaneous). The medical profession can, of course, cope with the fact that it doesn't always *know* in certain cases what caused a certain disease or symptom, especially if it has ambitions to treat internal diseases, as did the Hippocratics.

⁴ See also Holmes 2010, 142-7.

⁵ The literature on the Hippocratic use of *πρόφασις* is ample but somewhat outdated. Prominent contributions include Rawlings 1975 and Rechenauer 1991.

It is less clear that medicine can cope with a domain that is not determinately (but not necessarily *deterministically*), causally ordered, which is the threat posed by the metaphysically spontaneous. This is just what the author of *Alim.* means by saying that humors are spontaneous "to us" but not spontaneous "in their cause." It is also the author's concern to emphasize the internality and non-evidence of certain humoral processes: they are unobservable, hence unknowable, and therefore they are not susceptible to intentional manipulation. Nothing happens (metaphysically) spontaneously, or without a cause, and the kinds of causes the author has in mind, to retroject Aristotle's terminology, are material and efficient causes. But certainly Aristotle would agree with this, and so, to the extent that Aristotle allows spontaneity to play a causal role in his system, he cannot mean the same thing by "spontaneity."

Much the same goes for the discussion of spontaneous recovery in *de Arte*. There, the author defends medicine against the charge that, because some recover without a doctor, medicine never really heals anyone:

Now he who makes the opposite argument will say that many who were sick have recovered even without consulting a physician, and I do not doubt the claim. It seems to me, however, that it is possible even for those who do not consult a doctor to chance upon medicine (ἡτρικῇ περιτυχεῖν). This does not, of course, actually result in their knowing what is correct in it and what is not, but rather in their hitting upon by chance (ἐπιτυχεῖν) the very treatments that would have been applied had they consulted a doctor. (5.1-2 Jouanna=6.6-8 L.)

The Hippocratic is concerned first and foremost with spontaneous healing, specifically, metaphysically spontaneous healing. He responds by arguing that every recovery has a cause that can be known and predicted (6.4 J=6.10 L.). Apparently spontaneous recoveries are cases in which patients "hit upon by luck" the correct treatment without meaning to, though surely they are happy about the unintended consequence. Interestingly, here the Hippocratic notion of luck approaches that of Aristotle, who in the *Physics* writes that luck (τύχη) is in effect when y occurs because of x and x was not done for the sake of y , though it might (and might usually) have been. And since, for Aristotle, luck is a species of the spontaneous, it would seem as though the author of *de Arte* denies spontaneity in the "Hippocratic" sense while allowing for spontaneous or lucky events in the Aristotelian sense.

Hence, *de Arte* does not contradict Aristotle in quite the way that Johnson imagines, though Johnson may be forgiven in light of the fact that Aristotle himself repeatedly exaggerates the starkness of the contrast. Aristotle is keen to distinguish himself from those who "say that nothing happens by chance" and claim "that everything which we ascribe to chance or spontaneity has some definite cause," though a closer look at *de Arte* suggests that the alleged dispute may be verbal (*Phys.* II 4, 196a1-3). Aristotle's use of

the terms "spontaneity" and "luck" is largely stipulative and corrective. It does not reflect current usage in medicine, at least not among those whose writings survive in the Hippocratic corpus, and this may explain why, surprisingly, Aristotle altogether avoids medical examples in his most detailed discussion of spontaneity and luck in the *Physics*.⁶

III. Aristotle on Spontaneous Generation

None of the above casts immediate doubt on Johnson's basic premise, namely, that Aristotle is struck by the fact that some diseases remit spontaneously, and further that Aristotle's medical background is probably responsible for this. However, my revised characterization of the Hippocratic views on spontaneity might have implications for Johnson's discussion of spontaneous generation in Aristotle.

Johnson identifies two distinct but related *aporiai* about spontaneous generation that, he claims, Aristotle's medical background illuminates. The first occurs at *Metaphysics* VII 9, 1034a9-10, where Aristotle admits it is a difficulty for him to explain why some things (such as health) can be generated both by art and by spontaneity, whereas others can be generated only by art (such as a house). Johnson tries to make sense of Aristotle's proposed solution to the *aporia*, which runs something like the following: in some cases, "matter is capable of being moved itself, either by something else not having the art, or by a part" (*Metaph.* VII 9, 1034a10-21). Clearly, both the matter of the house and that of the body is capable of being moved by something else that doesn't have the art, as stones and lumber may be moved by a storm and the body's temperature may be affected by intense sunlight. While it is of course highly unlikely that stones and lumber should be so moved as to form a house, it is difficult to see how this is to be explained by recourse to the matter itself. Hence, this part of Aristotle's "explanation" is no such thing: matter doesn't actually explain the difference, when it comes to spontaneous generation, between health and houses.

⁶ In the revised version of the paper in this volume, Johnson floats an attractive explanation for Aristotle's puzzling silence. Strictly speaking, spontaneous recovery would be for Aristotle a case of luck (τύχη). Thus, it would be uncomfortable for him to use spontaneous recovery as an illustration of luck when he is taking great pains in the *Physics* to distinguish the two. This account imagines that Aristotle was himself sensitive to the terminological mismatch (discussed above) between his refined notion of spontaneity and the term's application in contemporary medicine. I would add further that Aristotle's positive notion of spontaneity, while *metaphysical*, is *not* indeterministic. It may be that there is a basic and irresolvable discontinuity between his use of the term and the Hippocratics', and this discontinuity may explain Aristotle's reluctance to cite medical examples.

Let us turn to the other disjunct, namely, that the matter is moved by a part. Aristotle means that a process internal to the system in question might somehow set the matter in motion in just the right way. Still, the question remains: why couldn't a house come together in just this way? That the space shuttle or the United Nations can't come together in this way—as Johnson points out (133)—is merely an alternative way of illustrating the problem. It is not a solution, i.e., an explanation. In order to provide an explanation, Johnson appears to invoke the notion of spontaneity as employed in *de Victu* and *VM*. Some systems have internal processes that are directed toward certain ends, e.g., regulating the balance between hot and cold. The body itself cures some conditions. But there don't seem to be any such processes operating among the inanimate materials at construction sites. The chief problem with this explanation, as I see it, is that it is an explanation not available to Aristotle, since, on his conception, a spontaneous result occurs precisely when a desirable end is achieved by a process *not directed* at that specific end. So if the body achieves its “spontaneous” results through a process aimed at obtaining just such results, the results cannot be spontaneous in the required sense.

The second *aporia* emerges out of an apparent conflict between the biological works (e.g., *History of Animals* V 1, 539a21), where Aristotle allows that some animals are spontaneously generated on a regular basis, and *Physics* II 8, where Aristotle seems to deny this in a discussion of Empedocles' zoogony (see Johnson 18ff.).⁷ The inconsistency poses an even larger threat to Aristotle's system, contend critics, since, if some species can be generated spontaneously, then it's unclear what special advantage the concept of form confers upon Aristotle's biological theories. That is, what is it that form is needed to explain, if animal species can be explained without it, as they clearly can, at least in some cases.

First, Johnson attempts to reread the offending passage at *Physics* II 8, 198b34-6, where Aristotle writes that “[natural parts] and all the natural things are generated in a certain way (οὕτω) either always or for the most part, but none of them by luck or spontaneity.” Johnson reminds us that, technically speaking, Aristotle nowhere else in the *Physics* denies that spontaneous events can occur always or for the most part, though he does claim that lucky events cannot occur in this way. A key passage is *Physics* II 5, 196b10-16:

⁷ Note that the revised version of Johnson's paper included in this volume includes a substantially reworked (and in my view, improved) version of his argument, which may offer more adequate answers to the questions I raise.

First then we observe that some things always come to pass in the same way, and others for the most part. It is clearly of neither of these that luck, or the result of luck, is said to be the cause—neither of that which is by necessity and always, nor of that which is for the most part. But as there is a third class of events besides these two—events which all say are by luck—it is plain that there is such a thing as luck and spontaneity; for we know that things of this kind are due to luck and that things due to luck are of this kind.

Problematically for Johnson, however, Aristotle here is not fastidious in his distinction between spontaneity and luck. Indeed, he will not formally distinguish the two until the subsequent chapter (II 6, 197a36-197b1). Moreover, Aristotle gives no hint as to why lucky events could not be regular even though some spontaneous events could be, though, if Aristotle believes this to be the case, such an account would be crucial to the distinction between the two notions.

To strengthen his case, Johnson seizes on the adverb οὕτω ("in a certain way") in II 8 to help Aristotle out of the apparent contradiction. Aristotle has in mind the process of sexual reproduction, argues Johnson, and what he means here is that "*for the most part* natural things reproduce sexually according to the 'univocal' principle, with producer-product sameness," noting that "this does not exclude the possibility that some things are not generated sexually, but spontaneously, and it does not require that spontaneous generation be irregular" (117). Johnson's reading, which reconfigures the scope of the prepositional phrase "for the most part," is ingenious but, I think, incredible. It cannot make sense of the phrase "always or for the most part," since, if natural things were always generated "univocally," there would be no spontaneous generation of animals whatsoever. (It is perhaps telling that Johnson omits "always" in his paraphrase of the passage, settling exclusively on "for the most part.") Further, if in the passage Aristotle were intentionally opening the door to the naturally spontaneous, then the passage could not stand as a refutation of Empedocles. Aristotle would need still to explain why the natural phenomena in question were incapable of being generated spontaneously, even if some natural things admit of such incidental causes. But no such explanation is forthcoming.

Second, Johnson defends Aristotle by using medical spontaneity to turn the tables on Aristotle's critics, arguing, to great rhetorical effect, the following:

To ask why there is any need for formal reproduction since some species can be generated spontaneously is a lot like asking why there is any need of doctors, since some diseases spontaneously remit. It does not follow from the fact that some diseases may be spontaneously cured that all diseases may be. (138)

This last remark is certainly true: even if some diseases remit "by themselves," nothing important follows about the curability of diseases general-

ly. But one need not argue that all diseases may be spontaneously cured in order to ask why there is any need of doctors, as the Hippocratic treatise *de Arte* shows us. There, the critic of medicine challenges the efficacy of medical therapy, and his challenge is grounded in the observation that sometimes the sick are healed without medical treatment. If one can get well without consulting a doctor, then why bother with medicine in the first place? Today we have a fairly clear understanding of how to answer this question using statistical data pertaining to therapy and patient outcomes, so that we could formulate a satisfactory reply even to the most recalcitrant skeptic. We can forgive the ancients if the answer wasn't so ready to hand.

Indeed, the attack on medicine gets off the ground because, in the absence of strong independent reasons for believing that medical treatment is effective, the objection from spontaneity carries weight, at least more than Johnson is willing to admit. Likewise, in the absence of strong independent reasons for believing the formal account of animal reproduction, an objection from the spontaneous generation of certain animals carries weight. And those independent reasons *ought not* be that the formal account better explains the regularity of species, since even spontaneously generated animals are produced on a regular basis and exhibit regular forms. Unfortunately, I suspect that these are precisely the independent reasons Aristotle would offer for accepting formal explanations of natural things.

IV. Conclusion

Perhaps Aristotle should have followed the author of *de Arte* after all and argued against the existence of the spontaneous, at least when it came to the generation of animals. Such a move might have resulted in a more coherent system, at least from a strictly logical point of view. But the system might also have been less coherent with what Aristotle considered plainly observable fact: some animals come to be where previously there were no such animals. We are faced, it seems, with a classic clash between rationalist and empiricist intuitions. Critics who condemn Aristotle for the contradictions generated by this clash fail to appreciate the integrity and complexity of Aristotle's thought—about this Johnson is surely right. He is right, too, that understanding the medical background to Aristotle's thought yields a richer appreciation of his philosophy. But I fear that Johnson, despite his valiant efforts, is wrong to suggest that medicine can rescue Aristotle from the contradictions in his views on spontaneity. The sad truth is that, for all its ambitions, Greek medicine rarely saved its patients. Aristotle is no exception.