*Aristotle on Teleology* by Monte Ransome Johnson

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Aristotle's teleology is probably the most pervasive and the most celebrated doctrine in the corpus. It serves in multiple capacities and appears under many guises: as the core of his outlook on the natural world (nature does nothing in vain), as a principle of ethics (every action and pursuit... aims at some end), and even as the starting point for a philosophical anthropology (all human beings by nature desire to know). It is for many readers, expert and general alike, what one means when one speaks of Aristotelianism.

Yet, both despite and because of its centrality, teleology in Aristotle has been subject to a vast range of interpretations and criticisms over many centuries. Is his teleology an all-embracing cosmic orientation toward a single end? Have the ends of nature been designed and imposed by a presiding divine intellect? Are human beings the chief beneficiaries of nature's teleological orientation? The range of reactions and responses to such questions is very wide, revealing a great deal about how Aristotle's ideas have been appropriated and used by various readers.

Monte Ransome Johnson's *Aristotle on Teleology* is an ambitious attempt to come to terms with the central doctrine of teleology in Aristotle. It ranges over the history of its reception, the theoretical terms in which it is articulated, and the subjects to which it has been applied. Its scope makes the book part history of philosophy and science, part sustained philosophical analysis, and even part exhortation. The result is a work that deserves careful study and will undoubtedly be consulted by anyone interested in its issues.

The book is in two parts and 10 chapters. The first part, made up of four chapters, considers the explanatory framework provided


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by Aristotle's teleology; the second part and final six chapters turn to teleological explanation in natural science and elsewhere (Johnson considers teleology's role in Aristotle's ethics and politics as well as in his 'theological treatise', by which Johnson means *Metaphysics* 12).

Johnson's chief aim is, in his words, 'to reopen a line of Aristotelian interpretation that originated in the early twentieth century' [3]. This is an approach which he traces back to Zeller, Gomperz, and Ross, who take Aristotle's teleology as immanent in natural things, not as a transcendent guiding or creative force. The goal of each species is simply to be that species and to perpetuate its kind and not, as Johnson takes pains to emphasize, to serve the needs of some 'higher' entity, be it human beings or god.

The core of Johnson's interpretation comes in a striking and intentionally surprising formulation: for Aristotle, animal parts and their behaviors are adapted to their environment rather than the environment being adapted to them. In speaking this way, Johnson deliberately echoes a key notion in evolutionary biology. His point is not, however, to imply that Aristotle was an evolutionist. Rather, it is to signal his own rejection of a comprehensive or cosmic reading of Aristotelian teleology. In cosmic teleologies, not just a creature's immediate surroundings, but literally the whole universe is adapted to serve some overarching end. In Aristotle's teleology, Johnson argues, the primary beneficiary of natural ends is always some specific kind of thing.

The anthropic principle is a good example of the sort of approach that Johnson rejects: because even a slight change in any of several basic universal constants would have rendered intelligent life impossible, advocates of the anthropic principle argue that the universe must have been designed to promote such life. The ancient world had those who maintained similar doctrines: Stoic teleology was explicitly anthropomorphic, with the physical universe crafted to serve human ends. But Johnson rejects this as a reading of Aristotle's teleology. He argues instead that one must distinguish between an end as cause in the sense of the aim of the process on the one hand, and an end as beneficiary of the process on the other. Each species has been suited by nature to its environment so as to promote its own welfare. Whether in terms of the means of locomotion, habits of breeding, or preferred habitat, the fit between animal and environment—the

adaptation—is as close as it is for the benefit of that animal itself, not to serve the advantage of some other kind of animal. This includes both human beings and god as the putative ultimate beneficiary.

The book takes as its point of departure the history of interpretations of the teleological doctrine by thinkers in radically different traditions (a separate chapter is devoted to what he calls Aristotle's 'dialectical interrogation' of his predecessors). Johnson does not, in other words, present his position in a relative vacuum occupied by only the most recent studies of a particular approach. He locates his interpretation in relation to, and develops it out of, a broad range of sources, including Aristotle's predecessors, his medieval inheritors, and his modern interpreters. In several brief sections, Johnson considers reactions to, and versions of, teleological explanation by Peripatetics and Neoplatonists, medieval Arabic philosophers, Aquinas, Ockham, Descartes, Wolff, and Kant. Though space allows him room for only a fairly cursory summary of this history, Johnson argues that the tendency of those receiving Aristotle's teleology has been to shape it to their own purposes, whether broadly sympathetic to a teleological outlook or antagonistic.

An interesting but ultimately disappointing aspect of this survey is Johnson's use of Aristotle's colleague Theophrastus at the survey's conclusion, after Johnson considers various medieval and modern reactions and appropriations. In spirit, it is a commendable move that gives Theophrastus more credit as an interpreter of Aristotle than is usual. Johnson uses Theophrastus to reinforce his reading of Aristotle as working to articulate standards or limits for teleological explanation, against what Johnson describes as the excesses displayed in quasi-teleological explanations in predecessors such as Xenophon and Plato. According to Johnson, the *Metaphysics* of Theophrastus is an aporetic challenge to unbridled attempts to seek a teleological explanation for all phenomena; and as such it is largely in sympathy with Aristotle and not, as is often said, critical of the Master's approach. Unfortunately, Johnson's brief discussion is able to furnish little more than a flavor of this interesting, neglected work and so gives at most a suggestive plausibility to the idea that it can furnish insights into Aristotle's complex intentions.

An unexpectedly rich discussion of a vexed portion of the *Posterior Analytics* turns up when Johnson sets forth Aristotle's concepts

of cause and explanation. Johnson's overall aim (in the book's second chapter) is to discuss the four causes generally, before turning to a detailed exploration of the teleology of the final cause. But in what turns out to be an extended treatment of *An. post.* 2.11 and issues arising from it, Johnson explicitly draws a version of the four causes under the ambit of Aristotle's theory of scientific demonstration. As Johnson points out, *An. post.* 2.11 has been neglected and even dismissed by commentators, giving the impression that explanation in terms of the four causes was not a main concern at the time of the *Analytics*. Johnson effectively rebuts this assumption through a careful analysis of the roles of the various types of cause as middle terms in an explanatory demonstration, and of how one should understand the temporal sequence of cause and effect in Aristotelian proof. His analysis provides a touchstone for later parts of the book, giving a sense of continuity between Aristotle's theoretical remarks and the application of his theory in various treatises.

Given the very comprehensiveness of Aristotle's teleology, it is only to be expected that it should succeed better in some areas than in others. In the book's central chapters, Johnson argues that it works best at the level of the individual organism—indeed, that it was derived primarily from a study of living things as organisms—but less well both below and above that level. It is not a coincidence that Aristotle's scientific ideas have lost nearly all their plausibility with regard to the elements on the one hand and the living bodies of the stars on the other. Teleological explanation had to be left behind in these areas if science was to move forward. The situation is very different in contemporary biology. There teleological notions continue to seem not just useful but indispensable in ways that Johnson specifies.

Somewhat unusually for a book in ancient philosophy, Johnson intends *Aristotle on Teleology* to make a difference in contemporary attitudes. In the book's conclusion, he argues that Aristotle's teleology can change the way readers relate to nature. Such a claim certainly cannot be dismissed out of hand; indeed, it has considerable plausibility. One need only recall how Aristotle's doctrines about virtue and character have become central to recent work in ethics to be reminded that the study of ancient philosophy carries considerable promise for modern readers.

In his final chapter, Johnson draws ethical implications from his interpretation of Aristotle's teleology as immanent in things rather

than as transcending them. He argues that the species-specific ends of plants and animals are intrinsically valuable. Though other natural things can be made into instruments of human intentions—all artifacts are essentially the product of human ends that have been superimposed on materials naturally predisposed toward another end—Johnson claims that human techniques have a natural limit derived from what is necessary for our survival and successful functioning. To exceed that limit is to act in a way that is contrary to nature. In this way, Aristotle's distinction between κατὰ φύσιν and παρὰ φύσιν has ethical consequences.

Grasping the ethical consequences of the ends of nature, Johnson argues, is part of what constitutes theoretical wisdom. By beholding natural ends, we come to comprehend our place in a larger whole. It is thus part of the task of contemplation to recognize the limits implicit in naturally appointed ends of a well-ordered cosmos. For the philosopher, these ends constitute a proper and worthy item for contemplation and so become a part of the ultimate end of human life (though Johnson is careful not to turn the benefit of doing so into an anthropomorphic justification of other ends after all). Just as the wise person realizes that practical wisdom is not the highest wisdom, so too, Johnson claims, he or she understands that human ends as carried out through technology cannot trump other natural ends beyond naturally imposed limits.

A 'green' Aristotle is an interesting and even attractive notion, and the conviction that human intentions are incidental to the natural ends of organisms may indeed have profound consequences. But the argument goes well beyond anything in the corpus. When in the *Nicomachean Ethics* Aristotle praises the relatively few needs of the contemplative life against those of the life of political involvement, he does not invoke the intrinsic value of the resources that the moderate philosopher will not be expending. Though the highest wisdom provides, I am sure, protection against over-reaching, Aristotle's Greek cultural context suggests that one who forgets human limits is tempted to presume godlike importance, not to become a despoiler of the environment. In a world centuries before the machine age and exploding populations, when human survival was made tenuous by the constant threat of disease and poor harvest, it is hard to see how any amount of consumption of natural things (animal, plant, or mineral) could have been seen as exceeding a natural limit.

As John Locke thought 2000 years later, nature's abundance had no limit. Environmentally conscious readers of ancient philosophy might sense a kindred spirit in a philosopher who spent years wading in Mediterranean tidal pools gazing in wonder at shellfish. But their cause needs more direct support.

Perhaps inevitably for a book of this scope, there is sometimes a feeling of a survey. The range of topics covered in the table of contents is truly impressive; in practice, the pages devoted to some of them can be quite few. One may also feel surprise at how certain material is announced. Aristotle's biology offers the most extensive application of teleological principles in the corpus. Yet Johnson does not give the core of this material, *De partibus animalium* 2–4, a systematic reading. Rather, passages from these books are selected and treated topically, with relatively few passages used to illustrate key points of his interpretation. And despite Johnson's striking take on an animal's being adapted to its environment, I was disappointed by how little is said about *Historia animalium* 8-9, which is filled with careful observations of animal ecology. A few passages are quoted and others are referred to. But there is no sustained exploration of the details of the information Aristotle gathered so carefully. Even if (as Johnson says) the *Hist. an.* is a preliminary collection of data that does not include teleological explanations, evidence pertaining to adaptation is plentiful in these books; and I for one feel the lack of a fuller discussion of it.

This may just mean that Johnson's book is not the book I would have written (the unspoken lesson of many a review!). It is not, to put it impersonally, a study of teleology in Aristotle's biology. What it is, is a careful study of teleology as it permeates Aristotle's philosophy, and as such, one that at least touches all the bases—and then some. Like any good work of scholarship, it invites further efforts along the directions it has laid out.

While it is notable that Johnson traces the origin of interpreting Aristotle's teleology as immanent and not transcendent to commentators from as much as a century ago, it is both a bit disingenuous and ultimately unnecessary for him to claim to 'reopen' that approach: as he readily admits, this view has had many advocates since. True, none of the interpretation's more recent proponents have devoted a book-length study to teleology, a fact Johnson cites as justification for

his own effort. But as it stands, Johnson offers a comprehensive examination of the doctrine as it appears throughout the corpus and as it bears on more general philosophical ideas in Aristotle and beyond. The degree of success achieved in meeting these goals is, it seems to me, justification enough for this stimulating, far-ranging work.