

## The Philosopher: An Appreciation of Aristotle

By Craig Skinner

*“Those who have spent time arguing instead of studying things as they are show all too clearly that they are incapable of seeing much at all”*

(Aristotle, “On Generation and Corruption”)

Aristotle here urges his students to pick up their cuttlefish to study its form rather than pick up their Plato to study the Forms.

Philosophy is a sustained, systematic attempt to understand the world, our place in it and how we should live. Reliable knowledge about the world is a good start, and science is the way to get it. Not that science can tell us all we need to know. That idea is a philosophical one, and science has little to say on some key aspects of human life such as love and spiritual development. Also, some knowledge is a priori, although I wonder if this is really the regularities of the world experienced by our ancestors hard-wired into us by evolution, so that all knowledge is empirical after all.

Philosophy and science came apart in early modern times as first physics broke away, then biology, psychology, sociology, and now we have sciences of sport and pop music. Philosophy remained, as conceptual and linguistic analysis and as phenomenology, in the analytic and continental traditions respectively. Separation of science and philosophy may not be a good thing and I share hopes of a remarriage after a long divorce (1).

So my choice of best companion on the philosophical journey is Aristotle. He made outstanding contributions to most of what are now separate sciences, as well as to philosophy. His metaphysics, ethics and politics are grounded in his study of living things. He was a natural philosopher and sociobiologist. On the minus side, he was relatively weak at mathematics, and his cosmology was bizarre.

Aristotle has had his ups and downs.

Passed over as Plato’s successor as head of the Academy, he flourished under Philip of Macedonia, tutoring his son (Alexander), founded and headed his prodigiously productive research institute, the Lyceum, and did several years fieldwork in marine biology. He fell out of favour after the death of Alexander (by then the Great), leaving Athens to avoid trial on impiety charges a la Socrates.

In the centuries after his death, he was eclipsed by Plato. He was lost to the West after Rome’s decline but was studied in the Islamic world, most notably by Averroes in the 12<sup>th</sup> Century. Rediscovered in the West in the 13<sup>th</sup> century, his adoption by Christian philosopher-theologians, notably Aquinas, made him “The Philosopher” of the middle ages until rejection of scholasticism as arid and sterile, and of Aristotle along with it, by the early moderns: one 16<sup>th</sup> Century Parisian philosopher is said to have publicly defended the thesis that “everything Aristotle said is fabrication” (2).

Only a fraction of his output survives, and the style is dry, lacking Plato's brilliance. Cicero's comment that Aristotle's prose was "flowing rivers of gold" (3) clearly shows access to polished works which have been lost to us.

His contribution to any one of logic, physics, biology, metaphysics, ethics or aesthetics would assure his status as a great thinker. The combination of all six makes him simply the best, better than all the rest.

This is amply illustrated by brief consideration of each of the six.

Logic: Although the beginnings of logical argument are evident in Socrates' interrogations, Aristotle developed predicate logic from scratch, introduced the notion of deductive validity, invented the use of symbols for variables, allowing him to appraise arguments formally or abstractly, and specified which deductive arguments containing two premises and a conclusion (syllogisms) were valid. Logic simply was Aristotle's syllogisms for some 2000 years until improved on by propositional logic in the 19<sup>th</sup> Century. And the puzzle as to the truth value of future contingents, arising out of his law of non-contradiction, is still debated without consensus.

Physics: Aristotle's physics is given an unfairly bad press. Given the accepted cosmology of his day, namely an Earth-centred system of concentric spheres with circular motion in the heavens and linear motion on Earth, his physics is a coherent system of fluid mechanics. Thus, earth moves down in air and water, water moves down in air, air moves up in water, intermediately dense things move up in one medium and down in another eg wood falls in air, rises in water, rests on earth. Big things fall to the ground faster than small ones (of equal density and shape) because the small one's greater surface/volume ratio produces more drag. He also predicts that falling objects will reach a maximum speed. And indeed things dropped from a great height do just this. It's no good Galileo complaining that he means falling in a vacuum. Aristotle simply replies that his physics is about the real world where things fall through air or water. Also, he might add, the idea of a vacuum is incoherent because, in it, a falling body would reach infinite speed. Right again – an object accelerating in vacuo in a gravitational field would reach arbitrarily high speed, limited only by the fact that it must ultimately hit the body which gravitationally attracts it. Aristotle's physics lasted 2000 years, not because its untested dogma slowed scientific progress, but because it was a good theory, until it fell, along with his cosmology when Copernicus, Galileo, Kepler and Newton came up with better: heliocentrism, universal laws of motion and gravitation, and absolute space and time. The latter in turn gave way to Einstein's relativistic spacetime, and this theory doesn't work below the Planck scale and so will give way in due course to a quantum gravity theory. Read Galileo's "Dialogues Concerning Two Sciences" to see how indebted Galileo is to Aristotle. And for a modern Physicist's view try Rovelli (4).

Aristotle attempted a mathematical treatment of his ideas but this was not his strong point. Of course while the Greeks loved the purity and certainty of mathematics, they had little interest in applying it, and we had to wait for Descartes, Galileo and Newton to appreciate the power of mathematics in describing and controlling the world.

Zoology: Aristotle's fieldwork in marine biology was world-class, and unsurpassed for 2000 years. As a naturalist, he was on a par with Darwin. Indeed the latter (5), referring to the illustrious biologists Linnaeus and Cuvier, says "they were mere schoolboys to old Aristotle". Of course Aristotle didn't come up with the idea of evolution by natural selection. He knew all the relevant facts: that individuals of a species varied one from another; that some variations were heritable; that some variations aided survival. But he didn't put it all together and suggest that this was a mechanism for progressive change and the development of new species. I think because of his view that there were fixed natural kinds so that it didn't occur to him that species could change over time. Of course nobody else came up with the idea either, though Hume was close, till Wells (1813), Matthew (1831), and later Wallace and Darwin (6).

Metaphysics: he respected Parmenides' view that being and nonbeing can't arise from each other. However he rejected the absurd corollary that change was impossible, by postulating two sorts of being, act and potency, or actuality and potentiality: change occurs when the potential becomes actual. An acorn is a potential oak tree and becomes an actual one when matter takes on the form of an oak. Or a thing may persist but its property change as when a white thing is painted black. His study of living things, their development, behaviour and parts prompted notions of potential, form, function and ends, and of the soul as the form of an organism - a range of capacities comprising nutrition, metabolism and reproduction in plants, plus motion in animals, plus reason in humans.

So for Aristotle, the world (excluding the heavens of which more in a moment) was one of things (substances) with properties, some essential (essences), others contingent (accidents). Every thing had a fourfold explanation: what it's made of (matter, material cause), what it is (its form, formal cause), how it came to be (efficient cause) and what it's for (final cause).

So far, so natural. But his account of the heavens was bizarre. He thought that some astronomical bodies were alive and moved purposefully from their desire for God. In short, stars were less like stones than like persons. But he never held that stones fall from any desire to do so, as he is sometimes portrayed.

Medieval philosophy, and Aristotle by association, was rejected by the early moderns. The esoteric Christian doctrines of the Holy Trinity and the Eucharist had been explicated in terms of substance, form, essence and accidents, and this framework fell into disrepute. And Aristotle's final cause, used by the scholastics in explaining God's purposes in the world, fared especially badly. He was accused of postulating conscious purposes and occult powers in nature. He never did (except in his cosmology), although some of his followers did. "Teleology" became a dirty word among philosophers. However, our modern understanding of natural selection spells out how nature involves final causes, not how it can do without them. When the 17<sup>th</sup> century scientists rejected the purpose-filled medieval universe, they were returning to, not replacing, Aristotle.

There has been a huge recent revival in Aristotelian metaphysics. Notions of disposition and potential yield a better basis for understanding, respectively, causation and laws of nature, than Hume's regularities and Armstrong's relations between universals (7). They also allow an account of modality using the resources of this world (8), avoiding Lewis's possible worlds extravaganza. The notion of enformed matter is a better basis to develop an account of

the mind-body relationship than Descartes' substance dualism with its intractable interaction problem. And evolutionary developmental biology (evo-devo) explains how creatures get their forms. Indeed evo-devo, with its emphasis on dispositional properties, has been termed "a science of dispositions" (9) replacing the defunct deductive-nomological model in the biological realm.

Ethics: his biological studies led to the idea that we can understand things only by invoking function and purpose. These are normative concepts implying value judgment, so that for Aristotle there is no is/ought gap of the kind emphasized by Hume and Moore. Having regard then to the proper ends for human nature, the best life for us is one of virtuous activity in accordance with reason. Virtuous activity arises from good character developed by habit. And the emphasis on good judgment having regard to the particular circumstances, rather than algorithms or rules, chimes well with the modern situational approach to ethical decisions.

Aristotelian ethics is about self-development, albeit as social beings. The charge of egoism is evaded if the virtues are seen as constitutive of, not instrumental to, the good life: relations with others are constituents of our happiness rather than simply means. Thus I am not kind because it puts another in my debt and makes me look good, rather because it is a feature of the best life. Eudaimonia, not hedonism. Still, one who is kind simply because the other needs help seems more virtuous, so that maybe a whiff of egoism remains.

Virtue ethics was revived in the 20<sup>th</sup> century by those who felt that deontological and utilitarian views neglected virtue, moral character, moral wisdom, moral education, and humans as social animals rather than as simply individual agents. Any final theory, if such ever arrives, will likely include elements from all three traditions, and impressive attempts to combine them theoretically have already been made (10). In practice, most parents follow Aristotle, trying to instil good character developed by good habits in their children, often, too, with a nod to Kant and Rule Utilitarianism as they ask the child "what if everybody did that?"

Aristotle's exclusion of women, slaves and foreigners from citizenship is regrettable, but this is a criticism of his social and political views. We can retain his ethical principles while enlarging their scope to apply to all. Similarly, the list of virtues can be amended: the cardinal Christian virtues of faith, hope and charity could be added; magnificence and magnanimity might be deleted; humility could be switched from vice to virtue.

Aesthetics: Aristotle's analysis of tragedy was recently described as "the single most important piece of literary criticism in Western culture into the twentieth century" (11). He emphasized plot rather than special effects or method acting, introduced the notion of the flawed "tragic hero", of "reversals" and "discoveries", and of catharsis produced by tragedy. Unlike Plato's condemnation of poetry and theatre, he sees the appetite for philosophy and for theatrical imitation as part of the same drive to know and understand. Sadly, any writings on comedy have been lost. In Umberto Eco's novel, "The Name of the Rose", a medieval monk discovers the lost volume on comedy but finds it so subversive of the faith that he keeps its existence secret.

In conclusion, Aristotle was not only The Philosopher of the middle ages, but remains the heavyweight champion of philosophers today.

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