Editorial (18.1)

Plato and Aristotle

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I was recently given the task of making a short presentation for the U3A Philosophy group. The previous month we had an excellent and very clear presentation on Plato, so good in fact that others failed to volunteer for the follow up 'Aristotle', and so it fell to me. Having been a research scientist for many years I had made it an unconscious policy not to get too involved with 'philosophy' and the thoughts of people who lived more than 2000 years ago. I thought it prudent to stay in the more concrete world of science, with current questions, experiments and possible outcomes that could lead to useful, concrete results. But in order to make a reasonable talk on Aristotle I had to get into the ideas and views of Aristotle's time—and I found it much more fascinating than I had expected—particularly in their relevance to complexity and to current world problems.

So, as may become obvious to those who 'know', I am not at all a certified philosopher and therefore not qualified to philosophize. So please excuse me if some of this may seem incorrect, incomplete or wrong. The point is that on picking up my books on Plato and Aristotle, I immediately found that I had an opinion (however ill-informed) about their relative merits. Plato believed in an ultimate reality that was not accessible to direct experience, but which influenced us, as we tried to make crude versions of the perfect, eternal, hidden reality of the 'souls' of everything. It seemed to me to be something like supposing that for each word in the dictionary there was an eternal perfect version, somewhere behind reality, floating in some heavenly space.

How much more understandable I found Aristotle, who believed in studying the 'real' world that we experience, and from which we can perhaps learn patterns and rules on with which to augment our thoughts and understanding.

It is interesting that before taking on the mantle of 'philosopher' at the Academy in Athens, Aristotle had learned to see life through the eyes of his physician father. He came to see the human body, indeed all of nature, as an organic whole whose functioning depended on coordinated interaction of its parts. Though subject to change, disease and decay, here was a wondrous work of art—here was harmony—here was a pattern that could be subject to scientific study.

And he believed that Scientific truths deal with the general not the particular. Human knowledge of scientific truths is based on "repeated sense experiences which reason allows a universal to form in the mind. By studying a number of experiments, he thought that we could perceive or invent possible patterns in the results. These patterns, suggested possible general rules that 'describe' the outcomes and from this, the outcome of some further experiments could perhaps be predicted.

In other words, Aristotle anticipated the 'learning' circle of inductive and deductive reasoning. Knowledge increases by looking at a series of experiments or cases, inductive pattern recognition, and the formation of possible theories. The second step is the use of the resulting theory to 'predict' outcomes in further cases.

Where Plato sought knowledge of an ideal world through reason, Aristotle applied logical reasoning to experience. For Aristotle, all life was permeated with meaning and his encyclopedic mind undertook objective, scientific study of every major field of knowledge. The sheer breadth of the material encouraged him to be a systematizer, a classifier. Modern science and logic owe much to this side of his work.

Plato thought that the objects of true knowledge inhabit another world—an abstract realm independent of time and space, accessible only to the intellect. But Aristotle thought that there was only one world that we could philosophize about—the world we inhabit and on which we can perform experiments. For him a world of inexhaustible fascination and wonder. He was dismissive of Plato's Ideal Forms. He did not believe they exist. Where Plato believed that truth could be reached only through reason, Aristotle saw a reality in nature that, experienced through the senses and subject to rational analysis, could reveal universal truths. Where Plato was an idealist, he was a materialist.

In discussing 'final cause', Aristotle came close to ideas resembling 'equilibrium physics'. He believed that the basic goal of everything is rest and permanence. Physical objects fall to the ground. Man, as a rational being, seeks permanence by conceiving of unchanging objects, pure forms. Since everything is trying to reach rest, he believes, there must be a goal corresponding to what everything is trying to achieve. (This comes close to a statement of the Second Law of Thermodynamics!) He therefore believed that the cosmos had a final cause and an ultimate Good towards which everything is drawn. However, Aristotle would probably not have embraced the idea that 'maximum disorder' and 'maximum entropy' were the ultimate goal of the universe! Fortunately for us all, the 'complexity science' of recent decades has rescued us from this depressing vision.

Aristotle is clearly a founding thinker of the scientific approach. Plato on the other hand sees the world we experience as a shallow, misleading façade, behind which lies a more important, more fundamental world of perfect forms and souls. Having

seen myself as a clear supporter of the more scientific Aristotle, the only question remaining is from where we might draw our values, ethics and morals. After all, if we gain greater understanding and knowledge from the scientific approach, what should we use it for?

Aristotle suggested that Man is a "political animal", meaning that Man lives best in a "polis", the city-state form of the Greek state, which 'runs' with laws and customs, fulfilling his potential within a social context. This is the "good life", not a life of ease, but a life of virtue which results in the highest 'good'.

But this does seem a bit 'simplistic'. It seems to rely on some hidden beliefs that virtuous behavior will occur automatically. Clearly, religions of various kinds, can potentially promote collective, social survival by influencing individual actions. They can give examples of how one should behave when faced with various situations, through the lessons of parables and allegories. For me, an evolutionary view leads me to think that the belief systems of societies will move, through historical tinkering and upheavals towards 'workable' outcomes.

So, in fact, Plato's assumption of a superficial layer of 'appearance' which hides the underlying, but unknowable reality, seems to me strikingly modern! Many of the world's problems today arise from a clash of different sets of beliefs that have arisen historically in different cultures. Unfortunately, when different (untestable) 'belief sets' meet, there is a strong possibility of mutual slaughter. However, social disaster can also be driven by materialists who, instead of adopting Aristotle's advice and seeking a life of virtue, simply pursue their own self-interest. Societies are very often destroyed by the prevalence of corruption and personal greed. In order to function at all well, societies need a set of 'rules' which prompt people to cooperate, and provide a set of rituals and ideas through which that society operates.

But while we may see some religions as being based on rather improbable stories, we must face the fact that materialists also believe in unprovable ideas and theories. So the idea that 'free markets' will necessarily lead to optimal profits and maximum utility for the participants, is quite fanciful. Adam Smith, the originator of the ideas, had a profound belief in Christianity and the attendant moral codes. Clearly the problem that massive monopolies might emerge had to be countered, and indeed the emergence of oligopolies of 'big' players would seem to run counter to the original vision. Similarly, Marxism was born of an idealistic attempt to understand how Capitalism 'worked' and what it might lead to. So, political and social ideas and theories will have different outcomes depending on the historical details of the context in which they are tried out. Social democracy may founder on the narrow ownership of the media, on a lack of education or the desire for education on the part of a large section of the population, on resurgent nationalism, etc. This means that political and social theories are basically shaped, in reality, by circumstances and responses that are invisible beforehand. It is what we do not see 'behind' what we think we see that will drive the system along some particular course into the future. Although we may smile at Plato's idea of an untouchable reality underneath things, the forms and souls, in effect we still keep rediscovering the vital importance of particularities and diversity of local histories. In a complex world built up with successive layers of structure resulting from chance events and processes, we find that theories and ideas never seem to lead to the expected outcomes.

In physics, I remember from school, that we were told that Physics does not ask or answer the 'why' question—only the 'How'. In some ways this is where Aristotle took us—answering the answerable. But the hidden realities that Plato focused on are still with us, and indeed still lead to war and mayhem as belief systems clash. Similarly, the clash of people without beliefs (other than in their own self-interest) is also a continuing cause of death and destruction. So this clash between Plato and Aristotle is still of enormous relevance today. The science of complex systems shows us that we cannot know how a system will develop and change. The interplay of the different levels of description—individuals, groups and organizations, national and ethnic identities, technologies and cultures—can lead to genuinely creative and novel outcomes as well as to multiple crises and disasters. There are therefore 'hidden layers' and levels which can offer new opportunities or conversely cause unexpected disasters. Here in *E:CO* we try to grapple with this situation and throw some light onto what is going on. This is not easy. Think of all the marvels and many wonders of the stars, planets and of life and living systems that have emerged, and are still emerging from a creative universe whose path was not designed or planned. And the ideas of Plato and Aristotle are still relevant today in thinking about this evolutionary reality.