

The Relevance of Aristotle's Thought to the Understanding of AI
John Dudley (UCLouvain)

Abstract

In a famous phrase in Book II of his *Physics* Aristotle tells us that “Art imitates Nature.”¹ Thus τέχνη, meaning human thinking and acting for a purpose, is an imitation of the kind of thing that Nature is doing for a purpose without the use of reason. For example, when a doctor discovers and applies a medicine, he is imitating and improving on the natural power of healing found in all plants and animals, which Nature has developed without the use of reason. And when human beings develop weapons, they are imitating and improving on the means of self-defence which plants and animals possess without having the use of reason. Thus reason enables man to imitate and improve upon the workings of Nature, which are aimed at a goal. All thought is orientated towards man’s goals and aims in life. Artificial Intelligence fits into Aristotle’s framework of thought, since it is an instrument, like a medicine or a weapon, which human beings use to promote the achievement of their aims in life.

However, an important distinction must be made between Artificial Intelligence and Aristotle's concept of intelligence, the working of the intellect. For Aristotle the intellect is the most important part of the human soul. The existence of the soul follows from the struggle of all living beings to survive and develop to the fullest possible degree, thus from their teleological orientation, which cannot be explained in material terms. The inbuilt avoidance of death, the capacity of self-defence and of self-healing, as well as the fact of reproduction (not found in any non-living being), and also consciousness in animals and humans, i.e. the combination of the characteristics of everything alive requires more than matter to explain it and shows the existence of an immaterial coordinating principle.² No ancient author had any doubt about the existence of a principle of life, which they called the soul, but only Plato and Aristotle and their followers identified it as an immaterial reality.

The intellect in human beings is divided into two parts, the practical (τὸ πρακτικόν) and the theoretical (τὸ θεωρητικόν). The first of these two parts makes it possible for human beings to deliberate and then to choose freely. In his ethical works Aristotle writes that the principle (ἀρχή) of free choice is internal, i.e. in the soul.³ The possibility of free, i.e. uncaused, choice appears to be related, firstly, to the fact that the soul is a self-mover. Its specific aim of survival in the best condition (required to achieve Aristotle’s happiness) is not caused by any efficient cause (as held also by Plato). Living beings are not merely passive receivers of determining influences, like a stone. Secondly, in the case of human beings, the inbuilt faculty of intellect (νοῦς) enables man to choose his end and the means to this end, without being determined. Artificial Intelligence, on the other hand, is not immaterial and is not part of the human soul and also does not have free choice.

The question is then whether it is not excessively generous to refer to artificial intelligence as intelligence given that it is not alive and lacks consciousness and freedom. It is rather intelligence by analogy.

In regard to the remarkable capacity of artificial intelligence in the field of deduction and calculation, it should also be observed that Aristotle points out the limitations of syllogistic. The syllogism depends on the validity of its premisses. But premisses depend on empirical observation and on induction, which can be more or less accurate.⁴ In order to ensure the correctness of the syllogism Aristotle also requires the use of peirastic.⁵ The availability of a powerful tool such as

1 *Phys.* II, ii, 194 a 21-22; II, viii, 199 a 15-17; *Protrep.* B13 DÜRING.

2 Cf. John Dudley, *Aristotle's Concept of Chance, Accidents, Cause, Necessity and Determinism*, New York, 2010, 281.

3 *EE* II, vi, 1222 b 28-30. Cf. John Dudley, *Dio e contemplazione, il fondamento metafisico dell' Etica Nicomachea*, trad. di Giovanni Reale, Milan, 1999.

4 *NE* I, vii, 1098b 1098a 33-1098b 7.

5 *NE* I, viii, 1098b 9-12: “We must examine it [our first principle] not only on the basis of the conclusion and the premisses of our argument, but also on the basis of what people say about it. For all of the data are in harmony with a

artificial intelligence does not take away the need for accurate programming.

My aim in this paper has not been to take away from the extraordinary achievements of artificial intelligence and its future developments, but rather to see it in the perspective of Aristotle's physical, metaphysical and ethical thought.