PARADIGMS, THE KEYSTONE OF RESEARCH.

A revolution is a sudden or a major change, especially in ideas and methods. Human history has been going through a series of revolutions, as a result of what is called “a change of paradigm”: Its function is to settle the dogmas and the rules which may characterize an historical period, following the trends of a given society. However, paradigms reveal their weaknesses as they represent the result of men’s decision: the human mind tends to change suddenly and frequently. In fact, man’s desire has always been the pursuit and the achievement of knowledge, making especially science his best challenge. And when a paradigm is no longer able to describe and justify in a comprehensive way the new discoveries and trends that meanwhile man had developed, the “anomalies” between the past and the present cannot be hidden, leading to a crisis. But paradigms feed the society, representing the basis of human thinking. In the scientific field they are extremely important even though they may change. A paradigm does not mean that research has got to an end, but it has to be the stimulus to achieve a new and even more complete knowledge.

Aristotle knew it, and did everything he could in order to provide philosophical thoughts and scientific ideas for the classical world, establishing new methods of thinking in several fields: physics, metaphysics and logic were reformed by the Greek philosopher, setting a new, great paradigm that would last until the end of the medieval age. Its importance for science is evident: Aristotle wrote about what he could firstly experience. His physics is intuitive, based on the first answers his mind could provide in order to explain the phenomena he dealt with. Even when his paradigm was no longer able to cope with Galileo and Copernico’s discoveries about the cosmic vision, blaming Aristotle is a big mistake. The anomalies between Ptolemy and Copernico’s theories confirm and demonstrate that a change of paradigm is necessary in order to achieve a more suitable vision of the world. This shift is known as scientific revolution, and proves man’s desire of knowledge.

Today’s paradigms are just the result of centuries of discoveries and evolutions in the scientific field. The twentieth century saw Einstein’s theory of relativity, developing a new physics but generating many questions. As Galileo and Copernico did, scientists are trying to answer as many questions as possible, providing help for the society. In fact, today’ scientific challenges deal with finding new methods of technological innovation, in order to simplify human life. Smartphones and tablets, computers, the internet, cars, planes and more are examples of this contemporary change of paradigm, which aims to reform the way we spend our lives. Fifty years ago, in the period following the two world wars, most people lived in bad conditions, and science worked to provide solutions for the population. The industrial revolution, for example, carried many possibilities of jobs, combining innovational research with the demands of society.

In conclusion, nowadays we have got to a point in which science is quite part of our lives. What school teaches about it is supposed to be a way to continue the research. Knowing what philosophers and scientists have done, from Aristotle to Einstein and the present-day researchers, has to be the stimulus for seeking new ideas and models. Today’s challenge is carrying on a new scientific revolution, which may be able to respond to the new demands of society. The paradigms that are ruling our lives today may not be valid in the future, and this is the reason why we must keep looking for all the answers we need. This is what Aristotle, Galileo, Newton, Copernico and Einstein did, and by taking them as sources of knowledge, we may get to a deeper and deeper wisdom.