Ideology, Empirical Sciences, and Modern Philosophical Systems

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Abstract: This paper examines the role of ideology in the emergence of the empirical sciences and the evolution of philosophy. It argues that the orientation of the religious ideology, Christianity, at the epistemological and ontological levels was very instrumental in the emergence of the empirical sciences in the area dominated by the culture of the Western (Latin) church. This claim is demonstrated by an analysis of the theoretical and methodological orientation of pre-Christian Europe, the epistemological and other philosophical values sponsored by Christianity, as well as a comparative analysis of other cultural regions where such philosophical values did not exist.
The paper then explores the evolution of philosophy after the emergence of the empirical sciences. It points out that the progress of philosophy along rational lines and the generation of knowledge thereof is not equivalent to embracing the method of the empirical sciences (scientism), but rather is a rediscovery of the rational attitude bearing in mind the context in which it has to operate.

1. Introduction

The purpose of this paper is to show the impact of Christianity as a religious ideology on the development of the empirical sciences, and the influence of the latter on modern philosophical systems. In order to achieve this aim we shall first look at the relationship between science and philosophy generally. To begin with, empirical science is a way of doing philosophy, particularly what was once known as natural philosophy: the study of physical nature – as distinct from what was known until the 19th century as moral philosophy - the study of human beings, society and related matters. It was the discipline of natural philosophy and the departments of natural philosophy that became, by the 18th, 19th centuries, the disciplines and departments of physics, chemistry, and biology; some of the departments in the oldest European universities provide evidence for this.

Key words:

ideology, science, epistemology, ontology, values, Christianity, modern philosophy

2. 1 The Emergence of the Empirical Sciences: The Dominant Epistemic Outlook and Methodological Paradigm in Ancient and Medieval Europe

The movement from natural philosophy to the empirical sciences or rather the establishment of science as the dominant way of (and at the moment more or less the only credible way of) doing natural philosophy involved profound changes in philosophical outlook and methodological assumptions. Prior to the scientific Revolution, contrary to what some people may think, the empirical sciences did not exist. The formal sciences – that is, the mathematical sciences of arithmetic, algebra, geometry, and logic existed. These date back to remote antiquity, to Egypt and Mesopotamia, but the formal sciences were until the time of Galileo – the inventor of the method of the empirical sciences – primarily a tool for mystical and magical procedures. William Sahakian says in this regard that: "[Galileo's], mathematical theory of motion, which represented a decisive advance over Bacon's method of inquiry, grew out of his use of empirical Pythagoreanism, i.e., the application of mathematical to empirical facts about motion. Galileo had taken the laws of nature and placed them in a universal mathematical form; he had composed an ideal construction of them, i.e., a rational principle. He was enabled thus to resolve the age-old problem of the ancient Greeks regarding Being and Becoming; he was successful in applying the principle of Plato and Democritus to Becoming (the changes occurring in nature). Thus, the world is indebted to Galileo for correcting the vagaries of Empiricism by means of mathematical calculation, replacing the sterile Pythagorean number philosophy of the Humanistic period with an empirically valid mathematical theory."[1]

It is important to clearly show the intellectual frame of mind in Europe before the Scientific Revolution (the rise of the modern empirical sciences). Lynn Thorndike has clearly demonstrated that the view developed and spread by scholars, such as Dr. White in his *Warfare of Science and Theology* which states that magic and a magical anti-scientific turn of mind that was prevalent in Medieval Europe was introduced by Christianity and was a deviation from the scientific and anti-magical attitude of the ancients, is very false. In his *Place of Magic in the Intellectual History of Europe*, Thorndike clearly shows that pre-Classical and Classical European societies and Medieval and Renaissance Europe were redolent with magic and the magical world-view at both the popular and scholarly levels. Whatever science there was during these periods existed side by side with was subsumed under magic and the magical outlook. The magic and magical outlook in Medieval Christendom was largely inherited from pre-Classical and Classical times. The following passages will give an overview of Thorndike's arguments and demonstrations in respect of the above points:

"Pliny, [the Roman Historian], gives evidence that many of the intelligent men were coming to doubt a large part of the superstitious beliefs and observances once universally prevalent, and he himself makes a brave effort to assume a critical and judicious attitude, yet his work contains a great deal of magic…"[2]

"He [Pliny] declared that Pythagoras, Empedocles, Democritus and Plato had learned the magic art abroad and had taught it on their return."[3]

"Towards magic, as he understood it, Plato's attitude seems to have been sceptical, though perhaps not confidently so. He maintained that persons acquainted with medicine and prophets or diviners were the only ones who could know the nature of poisons which worked naturally, and of such things as incantations, magic knots

and waxen images; and that since other men had no certain knowledge of such things, they ought not to fear but to despise them. He admitted, however, that there was no use in trying to convince most men of this and that legislation against sorcery was necessary. He himself occasionally mentioned charms or soothsaying in a matter-of-fact way."

"Whatever Plato's opinion of vulgar magic, his view of nature was much like that of primitive man. He humanized material objects and materialized spiritual characteristics. For instance, …he affirmed that the liver was designed for divination, and was a sort of mirror on which the thoughts of the intellect fell and in which the images of the soul were reflected, but that its predictions ceased to be clear after death. Plato spoke of the existence of harmonious love between the elements as the source of health and plenty for vegetation, beasts and men. Their "wanton love" he made the cause of pestilence and disease. To understand both varieties of love "in relation to the revolutions of the heavenly bodies and the seasons of the year is," he tells us, "termed astronomy." This suggests that he believed in astrology – in the potent influence of the stars "divine and eternal animals, ever abiding" The "lower gods," of whom many at least are identical with the heavenly bodies, form men who, if they live well, return after death each to a happy existence in his proper star.[3] The implication is, though Plato does not say so distinctly, that the stars influence human life."[4]

"Aristotle's doctrine was similar. Windelband has well expressed his view:

The stars themselves were… for Aristotle beings of super human intelligence, incorporate deities. They appeared to him as the purer forms, those more like the deity, and from them a purposive rational influence upon the lower life of the earth seemed to proceed – a thought which became the root of mediaeval astrology."[5]

"In closing we may, however, sum up very briefly those elements, which we selected as combining to give a fairly faithful picture of the belief in magic, which then prevailed among educated people. Native superstitions from which science had not yet wholly freed itself; much fantastical and mystical lore from Oriental nations; allegorising and mysticizing in the interpretation of books – which in Philo went to the length of a belief that all knowledge could be secured by this means; a portrayal of nature which attributed to her many magic properties and caused medicine to be infected with ceremony and to be based to some extent on the principle of sympathetic magic; a widespread and often extreme belief in astrology; a speculative philosophy which was often favourable to the doctrines of magic or even advanced some itself; and the system of Neo-Platonism in especial, with which we may associate the view – prevalent long before Plotinus, however – that everything in the universe is in close sympathy with everything else and is a sign of coming events – these were the forces ready at the opening of the Middle Ages to influence the future."[6]

Thorndike shows that the magic and the magical outlook of Medieval and Renaissance Europe came, largely, from pre-Classical and Classical times. He does not, however, show the ideological basis of the method of the empirical sciences that exists today, which was an innovation that involved the employment of a demystified mathematics. This demystification involved a de-coupling of mathematics from its union with the intuition-based understanding of reality, such as Pythagoreanism, which held that "the whole world is, and that the life of man ought to be harmoniously ordered in accordance with mathematical principles; nay more, that such principles are living things and that numbers are the essence of the

universe,"[7] and, consequently, that numbers could be used to "move heaven and earth," as in numerology, astrology, and even in curing diseases, etc. This demystified mathematics was then combined with empirical observation.[8]

This new coupling was founded on the philosophical assumption that the universe operated (that is, that movement and transformations occurred in the universe) in definite measures, rates, and relations. The universe and the things in it are not spiritual, spiritualizable, or psychic entities, nevertheless they operated rationally in a manner that can be set out in mathematical formulae. The ancients on the other hand were bogged down with the view that if the universe or any thing in it operates rationally, then it must have a soul. The realisation that this need not be so (which appears to be based to some extent on the notion of a transcendent creator or creative principle that created the universe and the things in them, endowing them with laws of operation and allowing them to operate according to such guiding laws), the combination of a non-spiritual rationalisation of the universe with empirical observation, is the great achievement of Galileo. The method of the empirical sciences that thus arose is not shown by Thorndike to be the product of the ideological outlook of Christianity, but an examination of the elements of the ideological basis of Christianity will show this. We shall now proceed to demonstrate this point.

2.2 The Ideological Basis of the Transformation of the Dominant Epistemic and Methodological Paradigm of Ancient and Medieval Europe

Let us proceed in this section by first pointing out some background facts that should be appreciated:

1. There are three sources of knowledge or information: the senses, reason, and intuition.

2. These three sources can be enhanced to gain information that they would not have ordinarily gained. For example, the senses can be enhanced with telescopes, microscopes, stethoscope, etc. Reason can be enhanced by the study and methodic application of logic and mathematics. Intuition can be enhanced by various forms of divination, séance, etc.

3. Every culture, in the effort to gain more knowledge, develops and/or utilizes one or a combination of these sources of knowledge in an enhanced form.

4. Various arts come under the classification magic; we may however classify them according to the function they perform: curative (the various procedures, concoctions, etc., that are meant to cure disease/illness); preventive/protective (the various procedures, etc., meant to ward off attacks of diseases, enemies, etc.); offensive (the various procedures meant to inflict harm of a physical or psychological nature on persons, used for the purpose of retribution, as tactical weapons in conflicts, etc.); informative (the various procedures – such as divination and séance - used in trying to obtaining information about the past, present and future). Magic, therefore, in ancient and contemporary times, provides solutions and the promise of solutions to problems and needs in a situation where there is no apparent alternative or when the alternatives do not seem promising. People are forced to cling to these in the hope of survival, hence the great attachment of people to magic in pre-modern times, an attachment borne of desperation (and so making people susceptible to deception and charlatanry). An important point arises when we note that Plato, seeing the credulity and dread of people with respect to magic, suggested legislation against sorcery: he recommended the death

sentence for a prophet or diviner who brings mischief on a citizen through sorcery, and a penalty or fine (to be determined by a court) in the case of laymen.[9] In making these recommendations, Plato brings an important element of the epistemic development of human beings to the fore: namely, that legislation is required in order to prevent human beings from utilizing a source of information/knowledge they find useful either for beneficent or malevolent purposes. If a source of knowledge is not desirable, although it is useful, then legislation is needed to prevent people from using such resources and to make them rely on and develop alternative sources. This judgement that a source of knowledge as undesirable even though it may be useful can only be made on moral/ideological grounds. Now, Plato, as well as other intellectuals of his time, practiced magic, as Thorndike pointed out. This shows the very strong attraction of the practical value of magic; for it appears that though reason and science will provide better solutions to problems and needs in the long run, in the short run they had little to offer, and people generally preferred short term solutions that were readily available. In such a situation, intellectuals (priest, philosophers, etc.) and their clients were not going to let go of magic and hence direct their energies and attention to the development of science and reason. In this regard, it should be noted that many philosophers, from Xenophanes on, expressed a strong disapproval of magic on epistemological and other grounds, but they did not actively seek to overthrow the magical worldview and the culture that had grown in and around it. They acquiesced with it at some level (Xenophanes, for example, accepted attributing knowledge to the gods, such knowledge as can only come of intuition, which he otherwise rejects as a source of knowledge), and they also practiced magic as we have seen. The legislation against the intuitive sources of information/knowledge, which is necessary for the development of reason and science, was not made by the Greeks or any other ancient culture, except the Judeo-Christian culture.

5.Before the establishment of the methodology of the empirical sciences came into being, which as Sahakian pointed out above combines rational (reason) and empirical (sensory) procedures in an enhanced form, European philosophers, like those of the rest of the world, were exploring and utilizing other combinations. The most common approach combined intuition and reason, hence the dominance of mystical and magical procedures. It was Christianity, and particularly the Latin Church, which changed the dominant magical epistemic climate. The process was long in the making. To understand it we have to look back to Judaism and Moses.

Moses legislated against divination, séances, and other esoteric ways of gathering knowledge; he allowed only unsolicited revelation and direct communication with God. Christians adopted this Mosaic epistemic outlook. Let us look briefly at how the Mosaic epistemic outlook was worked out in practice. The Mosaic epistemic legislation was very difficult for Jews to live by in practice, especially in the pre-exilic times. There was constant struggle between those who tried to keep to the Mosaic epistemic law and those who wanted to adopt the practices of neighbouring nations, which were against the Mosaic laws. It can be said generally that the prophets were the champions of the Mosaic epistemic law, while many kings (with the exception of David and two or three of the kings of the Southern Kingdom), the nobles, and a large section of the populace where against the Mosaic law. Many of the kings also persecuted the prophets on account of their opposition to the epistemic path the kings had taken. Post-exilic Jews were more faithful to the Mosaic epistemic law, however, after the dispersal following the failure of the Jewish resistance and the destruction of the temple in 70AD, Jews in the

centuries that followed developed the Kabala, a theocentric sort of gnosis. A discussion of the reason behind the emergence of this sort of mysticism is outside the scope of this paper; however one may note that it appears to be connected with their acceptance of some non-rational dimensions in their otherwise rational understanding and conception of the Supreme Being.

Christians took over the Mosaic epistemic law and apparently fared well in respect to adherence until Constantine made Christianity the states religion of the Roman Empire. When Christianity became the state religion, it had to struggle to maintain adherence to the Mosaic epistemic law among a populace and a culture that had hitherto depended on those practices that it prohibited. The struggles of Christianity and its adherents can be gleaned from many sources: Stephen Skinner, for instance, asserts that the Church hierarchy was well into believing in the influence of stars and planetary bodies on the health and activities of human beings.[10] Thorndike affirms the same: "In 1305, for instance, when certain cardinals urged Pope Clement V to return to Rome, they reminded him that every planet was most powerful in its own house… Aquinas, chief of the medieval theologians, accepted astrological theory, except as limited by human free will, and further admitted that most men make little use of their liberty of action but blindly follow their passions, which are governed by the stars. Among other great medieval churchmen and canonists, d'Ailly and Gerson both believed that God signified important events in advance through the stars, and d'Ailly made some astrological predictions himself. Astrology was much taught in the medieval universities, and was regarded as the climax of mathematics and as an essential part of medicine."[11]

A clear Christian interpretation appears here: the allowance of freedom of the individual to change or control his\her destiny. This is because it is important for Christianity that a human being be judged according to how much he\she has sought communion with God on the basis of freedom and personal responsibility. This freedom raised the individual and his/her destiny above the beings and operations posited in the magical worldview inherited by Christianity. This can be regarded as a Christian synthesis and a clear sign that a Christianised European culture had started to evolve.

A very crucial element in the evolution of a Christian European culture, one which has direct relevance to our topic, is the establishment of what we may call a formal church (ecclesiastical) epistemological methodology censorship in the Medieval period. The Church in this regard developed an institution for, among other things, ensuring conformity to the Mosaic epistemic legislation – the determination of whether the sort of knowledge and the methodology, procedure or practice of gaining such information\knowledge contravenes Mosaic law and consequently should be prohibited and\or punished, or passes the test of Mosaic law and thus should be allowed to thrive. This epistemological censorship was open in the sense that it allowed any method, procedure, or practice that was not prohibited; it did not prescribe any method, procedure, or practice to be followed by all; consequently it allowed for innovation in methodology and competition among methodologies and their champions. This epistemological censorship produced three main results:

1. It served to discourage\prevent people from using and developing magic, divination, and most other sources for gaining information that depend on the enhancement of the intuition.
2. It set out a rough outline of acceptable methodological procedures and epistemic standards.
3. It allowed and even encouraged competition among methodologies and methodological innovation.

The case for the above developments in Western (Latin) culture is further buttressed when we look at developments in the regions under the influence of the Eastern Church and those under the influence of Islam. The Eastern Church was affected by its early subordination to the State; the Church's assumed responsibility to censor the methodology and information available to its members under these circumstances is bound to be tied up with the interests of the kings and emperors. These were inclined, per force of their office, needs, and circumstances, to patronise magic; the reservations of the ecclesiastical leaders in such a situation come to naught. For example, it does not seem likely that a monk like Rasputin could have existed in the court of any ruler under the ecclesiastical authority of the Roman Catholic Church.

Islam, on its own path, did not take over the Mosaic epistemic law as did Christianity, which grew directly out of Judaism. According to Wan Mohd Nor Wan Daud, "basically, there are two sources of knowledge that the Koran recognises, revelation (wahy) and human reason (agl)… The angels and certain humans such as the mother of Moses were inspired to do specific acts that were historically decisive, but in both cases they neither carried any Divine message nor prophecy nor laws…"[12] Wan Daud further points out that sense perception and the veracity of empirical facts are the necessary basis for the proper functioning of reason.[13] In the work of angels that do not carry a message, prophecy, or law from the Supreme Being, there is a lot of room for magical works, especially the benevolent type. The Koran is against malevolent magic (sorcery) (Surah 2:102 and Surah 20:69). However, it no where legislates against divination. In speaking of the trustworthiness of the revelations of the prophet Mohammed, the Koran states that people pay little attention to the words of a soothsayer: Surah 49: 40: "Most surely, it is the word brought by an honoured Apostle," Surah 49:41: "And it is not the word of a poet; little is it that you believe," Surah 49:42: "Nor the word of a soothsayer; little is it that you mind," Surah 49:43: "It is a revelation from the lord of the worlds."[14] This does not in any way amount to a prohibition of soothsaying, a particular form of divination, or of divination generally, or poetry for that matter. It describes the people's attitude towards soothsaying, which could change if, for example, they begin to have high levels of accuracy in soothsaying. On account of this openness, it was practised without censorship. Many forms of soothsaying developed. According to Skinner, in the Islamic world "the main forms of divination include Kibana, djafr, fa'l, ihhitilad;, tabir (Oniromancy), and of course raml, more precisely al-khatt biraml …. tabir has always been the most popular, followed by raml."[15] It should be noted that raml is said to have been brought to the world by the angel Gabriel who "first appeared before Idris (the Arabic name for Hermes Trismegistus) and taught him the art of geomancy".[16]

Other cultures, such as Hinduism, Buddhism, Confucianism, and traditional African cultures, similarly did not prohibit intuitive/mystical sources of knowledge. Indeed many including the traditional African culture encouraged it.

Given the above illustrations, it appears that elements of the Judeo-Christian religious ideology are necessary in accounting for the apparent fact that the empirical sciences, both in their methodology and the philosophical assumptions that underpin these, arose and gained dominance in the Judeo-Christian culture of the West. One may also mention, in support of the key role of legislation against magical sources of information, that Islamic culture accommodated Greek philosophy better when it first encountered it then did Western culture, which first destroyed it, and had to gain it afresh, some five centuries later, via the Islamic world

(Moslem Spain). Yet the Islamic world did not rise above the science of Aristotle. This correlation between the suppression of the intuitive/mystical/magical methods of gaining information and the rise of the empirical sciences not only operates at the epistemological level but also at the social and human level. For, apparently, the best intellectuals are drawn to the initiative methods, just as Plato and other Greeks were, because of the immediate practical solutions it offers, thereby making those who are most likely to generate methodological and theoretical breakthroughs in the sciences unavailable

Finally, it should be noted the Church censorship was not self-consciously done for the purpose of creating knowledge; and so was not clearly defined and oriented toward this purpose. Consequently, it was open to abuse. This came out clearly when Galileo, through the method of the empirical scenes he had created, arrived at knowledge that questioned the beliefs of the churchmen. The method of Galileo ordinarily would pass the censorship of the Church, but the censors on account of prejudice, etc., did not accept the knowledge that it produced. So the methodological epistemic censorship of the church was abused by way of extending it from the justifiable task of ensuring that scholars did not employ or develop intuitive procedures – divination, science, magic, etc. (this does not imply any justification of the excesses of the Inquisition) - to censoring knowledge regardless of the acceptability of the methodology behind it.

Fortunately for science, this abusive form of censorship occurred mainly in the Catholic area; in the Protestant areas, scientists were free. The Protestant hierarchy had rightly recognized that there was nothing wrong in their procedures and that the Church had to adjust to knowledge generated by an acceptable procedure rather than suppress the knowledge and procedure.

3. The Impact of Science on Modern Philosophical Thought

What then is the impact of triumphant science on modern times? From the methodological stand point, the application of reason and the senses to arrive at inter-subjectively acceptable facts received a great boost; for many, it became the only form of acceptable knowledge. In philosophy, this attitude, which was championed by the positivists, gave rise to the belief that science had come to replace philosophy generally or that science was the only way, or the best way, of doing philosophy. August Comte was one of the positivists who championed this view. For him knowledge progressed from the religious to the metaphysical philosophical stage and then to the scientific stage. Consequently, all areas of study had to be subjected to the scientific method: anything that cannot be so subjected is not worth learning. It is partly in this spirit that philosophers founded the various disciplines of the social sciences – Economics, Sociology, Political Science, and Psychology.

A group of positivist philosophers known as logical positivists tried to extend and deepen the positivist view. They argued that any statement that was neither analytic nor synthetic in an empirical sense - that is, verifiable empirically – was meaningless. So, metaphysical, ethical, and aesthetic statements were meaningless. They said this in order to eliminate metaphysics, aesthetics, ethics, religion, etc., from the sphere of knowledge and the intelligible, and to show that the only source of knowledge was empirical – because for them analytical statements that depend on reason for their validity and truth, independent of experience, provide only tautological truths;

knowledge about matters of fact cannot come from them. Analytic statements, and consequently reason, served to set up a framework that will enable human beings make correct observations. They are at the service of empirical procedures and observation.

One clear impact of science from the above was the near triumph of empiricism. Since the empirical sciences had been successful and the validity/truth of their claims depended ultimately on observation (as was supposed at the time), then empirical observation was the surest way, if not the only way, of gaining knowledge. The empiricists were trying to show that they were right after all.

Secondly, given the role of reason as seen in mathematics and logic in the empirical sciences, reason should be seen as a servant of empirical procedures, since reason, on which philosophy depends, cannot produce any knowledge on its own, but has been shown to be of service in guiding empirical procedures in science. Therefore the only role of philosophy in generating knowledge is that of the handmaid of the sciences. Philosophy has now moved from the position of the handmaid of theology, which was assigned to it by the scholastic philosophers, to that of being the handmaid of the empirical sciences. This attitude gave rise to many 19th and 20th century schools in philosophy, notably analytic philosophy, ordinary language philosophy, common sense philosophy, logical positivism, etc., especially in the Anglo-Saxon (English Speaking) world. These schools saw the task of philosophy as analyzing and clarifying the meaning of words, statements, beliefs, etc., employed in science and everyday life. Philosophy has no business in generating new knowledge simply because it cannot.

Philosophy responded to this scientism in a number of ways. The argument of the logical positivists was shown to be erroneous: science was shown to rest on metaphysical assumptions, such as the view that reality is at least partly material and is open to mathematical interpretation.

Grievous problems were encountered in extending the methods of the natural sciences to the study of human beings. Most notably, human events are not repeatable as are other natural events in the world of animals and inanimate matter. Human beings create and recreate their world through their conscious effort; they have a capacity for auto-transcendence, that is, for transcending any contemporaneous situation with self-consciously formulated goals. Thirdly, they can manipulate any study directed against them in order to produce distorted results (the Hawthorne effect, as this is generally known). Fourthly, human beings function with insight, foresight, wisdom, ingenuity, etc., which involve the interpretation of their world - the past, present, and future - an exercise that involves going beyond empirical facts. All of these make the study and utilization of the empirical method inadequate in respect to human beings. In response to these problems the method and perspective of hermeneutics was developed, especially in continental Europe, by such philosophers as Schleiermacher, Dilthey, Ricouer, and Foucault. This movement tried to show that the study of humans should proceeded by way of interpretation of facts, texts, cultures, history, etc. Hermeneutics has its problems, including the issue of finding a universal standpoint for interpreting all cultures and making cross-cultural comparisons, and the question of the hermeneutic circle. However, it has at least helped to bring back meaning and significance in philosophy, in restoring speculation and conjecture in philosophy and removing the sort of sterility imposed on philosophy by positivists and analytic philosophers.

It should be noted that apart from bringing about a number of philosophical schools, no serious philosopher, regardless of his/her school of thought, would dis-

regard science in his/her philosophical scheme. Science has brought a number of useful things to philosophy in general, ranging from facts about the cosmos – indeed cosmology as a major branch of metaphysics now has astrophysicists as its cutting edge researchers - the biological sciences provide useful facts via genetics, and physical anthropology supplies information about the nature of man that throws light on such issues as determinism and freewill. Perhaps more importantly, epistemic and methodological assumptions and attitudes, such as the observations about the rationality of science displayed in what Popper describes as conjecture and refutations, provide a model of auto-correction that scholars can adopt and adapt in other forms of study. In addition, the tentativeness of scientific truths has helped wean philosophy of the search for absolute indubitable truths, and has led it to settle for incremental objective truths as in science.

In conclusion, I should say that the empirical sciences have had enormous impact on modern philosophy, and that there is a strong but indirect impact on philosophy of the ideological basis out of which science grew. Contemporary Philosophy needs to examine this ideological basis thoroughly in order to come to a better understanding of itself and in order to develop a paradigm(s) for better knowledge and understanding in a world of increasing globalization.

Notes:

[1] William Sahakian, *History of Philosophy,* Harper Collins Publishers, New York, 1968 pp. 129-130.

[2] Lynn Thorndike, *The Place of Magic in the Intellectual History of Europe*, The Columbia University Press, New York, 1905, p. 54.

[3] Ibid., pp. 57-58.

[4] Ibid., pp. 60-61.

[5] Ibid., p. 61.

[6] Ibid., p. 110.

[7] Ibid., p. 59.

[8] Ibid.

[9] Plato, *Laws*, Book xi, p. 933.

[10] Stephen Skinner, *Terrestrial Astrology; Divination By Geomancy*, Routledge and Kegan Paul, London, 1980, pp.120-127.

[11] Lynn Thorndike, Op. Cit., pp. 11-13.

[12] Wan Mohd Nor Wan Daud, *The Concept of Knowledge in Islam*, Mansel Publishing Limited, London, 1989, p. 83.

[13] Ibid.,p. 84.

[14] *The Qur'an*, Translated by M.H. Shakir, Tahrike Tarsile Qur'an, Inc, Elmhurst, New York Fifth U.S. Edition, 1993.

[15] Stephen Skinner, Op.Cit., p. 30.

[16] Ibid., pp. 19-20.