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Descartes and the Attempt to Conquer Seventeenth Century Scepticism

Martin C. Doughtery

DESCARTES AND THE ATTEMPT TO CONQUER SEVENTEENTH CENTURY SCEPTICISM

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Martin C. Dougherty

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CHAPTER I

THE INTELLECTUAL ATTITUDES OF THE MIDDLE AGES

Any attempt to describe the intellectual climate of sixteenth century Europe necessitates a progressive study of the current of Western thought. The heritage of ancient Greece and Rome, the rise of Christianity, and the influence of alien cultures all played important parts in formulating European attitudes. In retrospect, however, these factors seem to be of an evolutionary rather than revolutionary nature. The accumulation of knowledge from the downfall of the Roman Empire until the latter part of the Middle Ages was a gradual and one-sided process. Christianity and the consequent creation of the institution of the church provided the only cohesive element active in this process of accumulation. Thus the energy of creativeness in almost every field was channeled toward the glorification of the Christian God. This situation in no way detracted from or frustrated creative thinking as long as it remained inside definite bounds, but it did effectively discourage attempts to propagate unorthodox ideas.

The pinnacle of ecclesiastical authority was reached during the twelfth, thirteenth, and fourteenth centuries. The church at this time was not only the supreme spiritual power, but was also respected as a higher authority in temporal matters than were the ruling kings and princes. Final authority rested not on a foundation of military or political power, but in the unquestioning faith of medieval man in the theological teachings of Christianity. St. Anselm, the French Benedictine who became the Archbishop of Canterbury, clearly displayed this type of faith when he wrote in his famous proof of the existence of God: "I do not seek to understand that I may believe, but I believe in order to understand. For this also I believe, that unless I believed, I should not understand."[1] St. Anselm's search for knowledge under those conditions was representative of the complete trust that medieval man placed in his church and God.

> Religion was their chief preoccupation because they desired salvation. Although the love of knowledge for its own sake was far from uncommon, the scholars of the age sought knowledge primarily because they hoped it would aid them in achieving salvation.[2]

It is important to note that because the authority of the church was so far reaching, every individual was

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[1]Anne Fremantle, The Age of Belief: The Medieval Philosophers (New York: The New American Library, 1955), p. 88.

[2]Sidney Painter, A History of the Middle Ages, 248-1500 (New York: Alfred A. Knopf, 1962), p. 430.

duly influenced by it. The unity of Europe such as it was under feudalism was not a political unity, but that of a unity of Christendom. A major drawback of this situation was that the intellectual contributions of the Middle Ages for the most part remained static and conservative. The arts, science, philosophy, and, of course, theology were completely subjected to principles concerning the salvation of the soul and the concept of eternal life.

If it were possible to completely ignore the achievements of architecture, the conclusion that middle age art produced little in terms of originality would be valid. However, by the twelfth century the religious theme provided a brilliant stimulation in this area, and the results were ". . . churches that were at once works of art and places of worship. . . . [and] to the believing medieval [person] a daily instrument of believed religion."[3]

Since science was not considered to be an instrument of salvation, advances in this field were practically non-existent. "Medieval lack of interest in natural phenomena and disregard of individual judgement had their roots in the domination of a supernatural outlook, an other wordly mentality."[4] However, "In assaying the progress made in

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[3]Irwin Edman, Arts and the Man (New York: W. W. Norton & Co., 1939), p. 41, 42.

[4]Abraham Wolf, A History of Science Technology and Philosophy in the 16th & 17th Centuries (New York: The MacMillan Company, 1935), p.2.

the development of human knowledge during the Middle Ages, it is important to distinguish between the theoretical and the purely pragmatic. . . . Increases of knowledge by observation and experience was particularly great in agricultural and industrial techniques."[5] Theoretical science was not so fortunate. As was mentioned earlier, theories regarding the physical and natural sciences that transcended theological guidelines suffered either rejection or, in some cases, advocates of unapproved theories were persecuted.

The extent of scientific retardation can be easily understood by examining one of the concepts of intermixed dogma and natural science:

> Thus the lion has these characteristics. As he moves along, he erases his footprints with his tail. This symbolizes the secrecy of the Incarnation. Then, the lion sleeps with his eyes open. That is the way the body of Christ slept on the cross. Finally, the lioness bears her cub dead and on the third day the father roars in its face and brings it to life. This signifies Christ's resurrection on the third day."[6]

The scientist, because he believed at least superficially in the complete authority of the church, found little inclination to question the validity of such reasoning. The secular, objective view of science was to come at a later age, but the middle age mind subjected to religious boundaries tended to view such things as nature

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[5]Painter, p. 435, 436.

[6]Ibid., p. 433.

through an aura of mysticism. "The intellect was not yet in possession of the resources that would have enabled it to come under the spell of scientific discovery."[7] Even after the scientific method asserted its superiority, modern science found it very difficult to shrug this influence of mysticism inherited from the Middle Ages.

Theology and philosophy were the most active concerns in middle age thought. The rise of scholasticism, especially the second part of the movement which lasted approximately from 1200 to 1450, saw the subservience of philosophy to theology.[8] The position that philosophy was forced to assume resulted from the spirit of the thought that was dominant during the above mentioned dates. Faith and reason, to use more easily defined terms, were considered by the scholastics as the two roads that led to the same conclusion: the existence of God. The roads, however, were not completely separate. The Bible and other divinely inspired works were considered to be foundations from which any conclusion drawn from reason must originate. "Since the philosophers of the period were primarily

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[7]Bernard Guillemain, The Later Middle Ages, trans. S. Taylor. Vol. 77 of the Twentieth Century Encyclopedia of Catholicism, ed. Henri Daniel-Rops (158 vols.; New York: Hawthorn Books, 1960), p. 103.

[8]The first part of the movement started around 850 A.D. with the establishment of the schools of Charlemagne. It ended around 1200 A.D. The intellectual activity during these two dates centered almost completely around the philosophical problems concerning universals.

scientific theologicians, their rational interests were dominated by religious preoccupations. Hence, while in general they preserved the formal distinctions between reason and faith, . . . the choice of problems . . . was controlled by theology."[9] The extent of theological domination is clearly demonstrated by the most famous of the scholastic philosophers, St. Thomas Aquinas, when he writes in his Summa Contra Gentiles:

> No one tends with desire and zeal towards something that is not already known to him. But men are ordained by the divine Providence towards a higher good than human fragility can experience in the present life. That is why it was necessary for the human mind to be called to something higher than the human reason here and now can reach, so that it would thus learn to desire something and with zeal tend towards something that surpasses the whole state of the present life. This belongs especially to the Christian religion, which in a unique way promises spiritual and eternal goods. And so there are many things proposed to men in it that transcend human senses.[10]

Thus, Aquinas points out that human reason can discover certain truths about the nature of God, but it can only carry us so far. When pitted against the mysteries of faith, reason fails and help must be sought from revealed religion.

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[9]Hunter Gunthrie, "Scholasticism," Dictionary of Philosophy, ed. Dagobert D. Runes (Patterson, H. J.: Littlefield, Adams & Co., 1962), p. 280.

[10]St. Thomas Aquinas, "On the Truth of the Catholic Faith, Book 1: God," Knowledge and Value, (ed.) Elmer Sprague and Paul W. Taylor (New York: Harcourt, Brace and Company, 1959), p. 333.

Aquinas' philosophy was a successful attempt to offset what could have been a thirteenth century re-evaluation of Christian dogma. The scholastics, with their interest in learning, came into possession of the major portion of Aristotle's writings. St. Thomas, for his part, found temporary success in fusing the use of reason as taught by the pagan Aristotle, with the faith of the Christian religion. But soon after the death of St. Thomas this union was challenged, and more and more doctrines of the church began to be withdrawn from the reach of reason and assigned to faith alone.

Though one of the main objectives of the scholastic movement was to create a harmonious union between rational and revealed truths, most energy was spent in defending church dogma against the subtle assaults of Hellenic rationalism. The attempt to fuse these two alien forms was an unacknowledged failure. The more daring and original minds began to recognize this by the end of the scholastic period, but the ecclesiastical minds continued the struggle well into the Renaissance.

Before tracing intellectual activity into the Renaissance period, it would be well to evaluate the achievements of the Middle Ages. The nature of this discussion has been critical, but only because the author has been observing this short history of thought from contemporary standards. The church during the Middle Ages

stood as an obstacle in the path of progressive thinking not as an enemy, but because it was simply the only criterion available. By later standards this norm seemed quite narrow and generally unproductive, but it must be noted that religiously orientated thought was representative of the values practiced during that period of history. Consequently, the church provided a refuge for all individuals beset with issues that threatened peace of mind. Philosophical questions concerning such problems as immortality of the soul, existence of God, and man's relation to the universe were not staggering or overwhelming challenges to the intellect. Revealed religion along with holy scripture proved beyond a doubt that these questions were merely concerned with the trials of temporal existence and had absolutely no bearing on God's plans for eternity. In the same light, a sound formula for salvation was within the mental grasp of every member of the church.

While constructing his own distinct civilization, middle age man achieved heights that eventually became of significant historical importance. Ideas and traditions stemming from this period not only influenced the Renaissance, but modern times as well.

> The doctrines of the Roman Catholic Church have been little changed since the Summa of Thomas Aquinas, and they are today a very vital element in our culture. The ideas of individual freedom that marked the members of the feudal class became a strong element in later conceptions of the rights of man."[11]

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[11]Painter, p. 478.

The achievements of the Middle Ages are tremendous when measured in the light of the materials available to man at that time, but when they are measured against the period immediately preceeding it, the difference between evolutionary and revolutionary thought becomes apparent.

> In the latter part of the fifteenth and in the sixteenth century the west, . . . left the medieval home in which it was brought up and began to study at the new university of human life opened up by the extraordinary changes in orientation that the hundred and fifty years following the fall of Constantinople [1453] effected in man's outlook on himself and the universe.[12]

Thus, the Middle Ages gave way to the Renaissance, which in turn, served as a period of transition between medieval and modern times.

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[12]B. A. B. Fuller and Sterling M. McMurrin, A History of Philosophy, (New York: Holt, Rinehart, and Winston, 1966), p. 1.

CHAPTER II

THE RENAISSANCE AS A PERIOD OF INTELLECTUAL TRANSITION

Needless to say, in a period which witnessed such monumental events as the introduction of movable type, the discovery of the new world, and the Reformation, it is difficult to point to any one event as being of more importance than the others. However, for this discussion the revival of interest in classical antiquity coupled with the secularization of learning stand out as accomplishments which stimulated new and, by medieval standards, daring speculations. Humanism, a product growing out of these two movements, began not in the Renaissance, but in the late Middle Ages. Thomas Aquinas' attempt to fuse pagan thought with Christian doctrine combined the pursuit for truth and beauty with the struggle for salvation. The early days of the Renaissance saw this term take on a new and more human meaning. "The broader definition of humanism states the typically Renaissance notion that man and his activities [were] the most important and interesting elements of the

universe. Thus, man himself, rather than God, [was] the proper subject of contemplation and examination."[13]

The new enthusiasm for Greco-Roman civilization began both geographically and spiritually in Italy. Although northern France had been the home of scholasticism during the Middle Ages, northern Italy became the undisputed birthplace of the initial phases of the Renaissance. Numerous reasons can be found for this shift of intellectual residences, but the most critical factors were the political and social developments that took place in Italy during the last stages of the Middle Ages. The form of government in Italy during this period was unlike that of the rest of Europe in that feudalism was rarely a popular nor practical method of control. Instead, the geographic areas were divided into numerous independent city-states ruled by an oligarchy composed of nobles and rich merchants. Much like the earlier Greek city-states, cities such as Venice, Genoa, Milan, and Florence engaged in serious competition for trade, wealth, and culture. Thus, a climate favorable to intellectual endeavors attracted artists, writers, and scholars who in turn were eagerly supported by wealthy patrons.

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[13]John Louis Beatty and Oliver A. Johnson (ed.), Heritage of Western Civilization (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1962), p. 300.

> The zeal for Greek and Latin classics reached its highest pitch in Italy in the fifteenth century and the first half of the sixteenth, and it was gradually communicated to other countries. By the sixteenth century the study of pagan classics . . . was being prosecuted throughout Christendom."[14]

As the effects of the "new learning" began to spread, the more serious European thinkers began to utilize the fresh freedom of thought. Some of the most distinct and influential products of the period were Erasmus of Rotterdam, Luther, Machiavelli, Galileo, and Copernicus. Though no original philosophical thought came out of the Renaissance, new approaches in science, political theory, and art began a course of separation that eventually liberated the latter fields from the combined spheres of theology and philosophy.

Erasmus of Rotterdam (1466-1536), along with his close friend Sir Thomas More of England, "was . . . deeply influenced by the skeptical thought of the Renaissance. Erasmus . . . wrote various Colloquies containing observations and commentaries on the contemporary world, and, more lasting perhaps, published his penetrating analysis of people and affairs under the title In Praise of Folly."[15] The sharp and delightful satire exhibited by Erasmus won for him little praise from his victims, but the fact that he was able to successfully publish such critical material

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[14]Carlton J. H. Hayes, Modern Europe to 1870 (New York: The MacMillan Company, 1959), p. 98.

[15]Beatty and Johnson, p. 301.

gives praise not only to his literary genius, but also to his deep insight into the affairs of his contemporaries.

Though a devout member of the Roman Catholic Church, he felt that the clergy bore most of the responsibility for the disgusting condition of the church. In 1509, he published a satirical masterpiece titled In Praise of Folly which systematically criticized every type of consecrated ecclesiastical office. Of the bishops he wrote:

> If our bishops would but stop and consider what their white albs signify--namely, sincerity and a pure life in every way untainted; . . . it would be safe to say that they would not lead such troubled and shameful lives. But as it is they are kept too busy feeding themselves to think on these things; as for the care of their sheep, they delegate this duty to one of their subordinates or to Christ Himself.[16]

The cardinals, monks, and priests came under similar denunciation, but the papacy received the brunt of the attack. Concerning the popes, Erasmus wrote:

> As to the Supreme Pontiffs, if they would recall that they take the place of Christ and would attempt to imitate His poverty, tasks, doctrines, crosses, and disregard of safety; if they were even to contemplate the meaning of the name Pope--that is, Father . . . then they would become the most humble and mortified of men . . . [But] the popes of our time still insist on profanely attaching Peter's name to territories, cities, taxes, wages, and all money. These are the things they fight to uphold with fire, sword, blood--inflamed by the zeal for Christ, of course. Having thus fought, they believe themselves to be justly called defenders of Christ, bragging that they have routed the enemies of the Church--as if the Church had any greater enemies than these charlatan popes . . .

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[16]Desiderius Erasmus, "In Praise of Folly," The Essential Erasmus, trans. John P. Dolan (New York: The New American Library, 1946), p. 156.

> who corrupt His teachings by forced interpretations, and who scandalize Him by their infamous lives.[17]

Erasmus, residing in northern Europe, wrote his critical evaluations from a removed yet subjective position. His concern for the gross hypocritical state of the Church was motivated by his devotion to the teachings of Christ. Unfortunately, the literal teachings of Christ had little value in the everyday battles for power and influence waged within the institution itself and by the church against governments seeking to control or usurp its wealth and power.

> The popes who ruled after the [Great] Schism ended did little to restore the tarnished prestige of the throne of St. Peter. The Renaissance popes were far more concerned with establishing the papacy as an Italian political power, patronizing arts and learning, living in splendor, and enriching their relatives and favorites than they were with improving their role as religious leaders.[18]

With these objectives in mind, the popes of the early Renaissance exploited areas of Europe where papal power was not rivaled by strong monarchies. Cries for internal reform, particularly from areas heavily influenced by the church, began to fall on receptive ears.

> In Germany, . . . there were fewer limitations on papal powers of appointment, ecclesiastical jurisdiction, and taxation. Rome drew enormous sums of money from Germany and the situation aroused the envy and

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[17] Ibid., p. 157, 158.

[18] Jerome Blum, Rondo Cameron, and Thomas G. Barnes, The Emergence of the European World (Boston: Little, Brown and Company, 1966), p. 114.

> cupidity of minor German rulers. This fact, together with the low moral prestige of the church, made the German people and their rulers more receptive to the idea of revolt.[19]

The Augustinian monk who nailed to the door of the castle church in Wittenberg, Germany, his objections condemning the unscrupulous promotion of indulgences certainly had no intention of starting a religious revolution. Martin Luther was occupied with the thought of reform and, prior to his excommunication, directed his energy toward just this goal. Luther's profound anxiety is vividly expressed in a letter written the same day the theses were attached to the church door. The letter is addressed to Cardinal Albrecht, the Archbishop of Mainz, and in it Luther asks his superior to put an end to the ugly marketing of indulgences. He writes:

> What can I do, excellent Bishop and Most Illustrious Sovereign? I can only beg you, Most Reverened Father, through the Lord Jesus Christ, to deign to give this matter your fatherly attention . . . and command the preachers of indulgences to preach in another way. If this is not done, someone may rise and, by means of publications, silence those preachers. . . . This would be the greatest disgrace for Your Most Illustrious Highness. I certainly shudder at this possibility, yet I am afraid it will happen if things are not quickly remedied.
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> I beg Your Most Illustrious Grace to accept this faithful service of my humble self in a princely and episcopal--that is, in the most kind--way.[20]

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[19]Ibid., p. 115.

[20]Martin Luther, "To Cardinal Albrecht, Archbishop of Mainz, Wittenberg, October 31, 1517," Luther's Works, Vol. 48: Letters I, (ed.) Gottfried G. Krodel and Helmut T. Lehman (Philadelphia: Fortress Press, 1963), p. 48.

As history shows, Luther's pleas for reform were largely ignored. Eventually he was excommunicated and declared a heretic. However, the seeds of revolt against Rome had fallen on fertile ground, and the protestant saw the first organized internal resistance registered against the universal authority of the papacy and the church. The Reformation succeeded in removing approximately one half of the population of Europe from the Catholic Church and thus, the medieval unity of Christendom was shattered.

The causes of the Reformation and the consequences resulting from this loss of unification constituted a complicated phase of transition in itself. Probably one of the more notable changes in the area of thought was the attempt to reject or purge the influence of medieval Christianity. The humanistic mind, particularly in Italy, openly displayed contempt for the medieval ascetic view of existence.

> Nature, so it was argued, had equipped man for action and usefulness to his family and fellow men; the culture of the humanists was not to lead man into seclusion. Also, material possessions must not be viewed merely with suspicion; for they provide the means for virtuous deeds, and the history of man has been his progress in becoming lord of the earth and its resources.[21]

This reaction against the "dark ages." as it was termed by Renaissance scholars, affected all areas of

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[21] G. R. Potter (ed.), The Renaissance, 1493-1520, Vol. I: The New Cambridge Modern History (London: Cambridge University Press, 1957), p. 73.

learning, and since emphasis was placed on creativeness, there is a temptation to conclude that statecraft was a product of this period alone. "There seems no reason to believe . . . that the Renaissance introduced the idea of a state as a work of art, which could be created. But it did introduce the idea that the theory of politics should be a political and not a theological concern."[22]

Niccolo Machiavelli expressed this realistic secularization of political theory when he described what he felt to be the proper conduct of the ruling prince. Published in Italy around 1532, The Prince won for its author nothing but outraged criticism from both protestant and catholic sources. The individuals dealing with rulers during Machiavelli's life were simply not removed enough from medieval-dominated attitudes to calmly accept such statements as:

> You must realize this: that a prince and especially a new prince, cannot observe all those things which give men a reputation for virtue, because in order to maintain his state he is often forced to act in defiance of good faith, of charity, of kindness, of religion. And so he should have a flexible disposition, varying as fortune and circumstances dictate. . . . he should not deviate from what is good if that is possible, but he should know how to do evil, if that is necessary.[23]

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[22]M. L. Bush, Renaissance, Reformation and the Outer World (London: Blanford Press, 1967), p. 301.

[23]Niccolo Machiavelli, The Prince, trans, George Bull (Bungay, Suffolk, England: The Chaucer Press, 1961), p. 101.

Taking into consideration the war-torn condition of his beloved Florence, Machiavelli's work was a plea for stability, namely the political stability that he felt existed in classical Rome. However, Renaissance man viewed his plan as a wicked work inspired by the devil. In his attempt to break with mysticism, he states: "I am not unaware that many have held and hold the opinion that events are controlled by fortune and by God in such a way that the prudence of men cannot modify them, indeed, that men have no influence whatsoever. Because of this, they would conclude that there is no point in sweating over things, but that one should submit to the rulings of chance."[24] In reality, which was exactly what he was dealing with, Machiavelli hoped to channel the existing intrigue and corruption into a logical, scientific system of political control. But neither the ecclastically dominated rulers of Italy, nor Renaissance man had the ability to transcend the state of naive hypocrisy that Machiavelli rebelled against. "It was not until the late seventeenth century that the views of Machiavelli were made effective. Only then was it generally possible, in the Machiavellian manner, to regard political theory in wholly political terms."[25]

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[24] Ibid., p. 130.

[25] Bush, p. 304.

Basically, the problem of theological deterrence remained in the field of science also. The degree of importance attached to science in the Middle Ages, as pointed out earlier, was minimal and, because of this, Renaissance scientists such as Copernicus and Galileo were forced to work under very difficult conditions. These very conditions and the skeptical reaction against them paved the way not only for the new science, but also for modern philosophy.

> The most important way in which men in the sixteenth and seventeenth centuries reacted against the Italian Renaissance was in matters of natural science. The Renaissance certainly prepared the way for the Scientific Revolution of the seventeenth century, but when it came, the revolution was achieved by dispensing with the basic tenets of Renaissance learning; namely, its reverence for the world of antiquity and its mistrust of systems of thought.[26]

It is rather ironic that the popular revival of classical learning, which was so important to Renaissance man, possessed the seeds of destruction for both ideals. The scholarly interest in all the writings of the ancients naturally forced new and more accurate translations. "The humanists of the Renaissance made important contributions not only by unearthing long-lost texts but also by freeing ancient texts of the mistranslations, abbreviations and misguided commentary with which they had become distorted and encrusted during the course of intervening centuries."[27]

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[26] Ibid., p. 305.

[27] Ibid., p. 306.

Thus, when the original texts, stripped of the haze of superstition, were presented to scientific minds, many of the gross misconceptions of the Middle Ages became disappointingly clear.

As a reaction against centuries of haphazard speculation, specialists in all areas of knowledge began to rely on precise measurements based on newly introduced scientific instruments and controlled experiments. There were not only doubts about the validity of the medieval texts, but also of the foundations of ancient knowledge itself. The critical study of this knowledge exposed both the truth and error in classical thinking and forced scientists to realize that the traditional criterions were not as infallible as once thought. The search for a new and more reliable standard eventually saw the downfall of classical and ecclesiastical authority. The quest for knowledge now assumed a pragmatic view, and the escape from middle age mysticism began.

"The most dramatic and revolutionary advances were made in the study of physics and astronomy. For centuries Western man had accepted the Greek view of the cosmos, which was in agreement with appearances. Men could plainly see the celestial bodies move each day in a circular path around the earth; consequently, they constructed a geocentric or earth-centered cosmology."[28] The church was

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[28]Blum, Cameron, and Barnes, p. 188.

in full agreement with the geocentric concept of the universe mainly because it provided a foundation for the idea of the benevolent God-man relationship. "Everything was conceived as having been intended and designed to serve some human needs. One might almost say that God himself was regarded as mainly occupied with human affairs. When mankind was thus conceived as the focus of cosmic economy, the earth, their stage, was naturally looked upon as the centre of the universe."[29]

The revival of ancient knowledge was also accompanied by a renewed interest in witchcraft and astrology. Popular witch hunts of the sixteenth century contributed nothing to the advancement of science, but the age old belief in the power of the stars roused Renaissance soothsayers to study with renewed vigor the nature of the heavens.

> Astrology was held the noblest of sciences, and its enlightenment and guidance sought in the most important affairs of life. As an explanation of the world and human fortunes, it rivalled or peacefully paralleled religion and belief in the devil. Progress in physics and astronomy and firmer conceptions of physical laws were gradually to dissolve this authorative congeries of unsound conviction.[30]

Nicolaus Copernicus, born in 1473, was one of the first Renaissance thinkers to cast doubt on the traditional

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[29]Wolf, p. 5.

[30]Henry Osborn Taylor, Philosophy and Science in the Sixteenth Century, Vol. V: Thought and Expression in the Sixteenth Century (New York: Collier Books, 1962), p. 88.

geocentric concept of the universe. Criticism of the geocentric theory did not originate with Copernicus' ideas. "Nicholas of Cusa had declared that the earth moved like the planets, and was not the centre of the universe. . . . Likewise, Leonardo asserted that the earth is not fixed at the centre of the celestial world, nor at the centre of the circle of the sun, which is the central body, and the source of light and warmth. But these ideas were not as yet fortified with any proof."[31] Copernicus, bothered by the discrepancies he discovered in the writings of the Greek astronomers, set out to simplify and correct the calculated movements of the celestial bodies. "He found that ancient Greek scientists had suggested that the sun, not the earth, stands immobile at the center of the cosmos. . . . . Inspired by this discovery, he showed by brilliant calculations that the motions of the heavenly bodies can all be explained by assuming a sun-centered or heliocentric universe."[32] Though the hypothesis was founded on seemingly convincing evidence, strong opposition arose from almost every corner of the Renaissance world. Copernicus realized that his theory would cause a great stir, and, consequently, he put off publication in order to avoid confrontation with the religious and intellectual forces. However, a simplified

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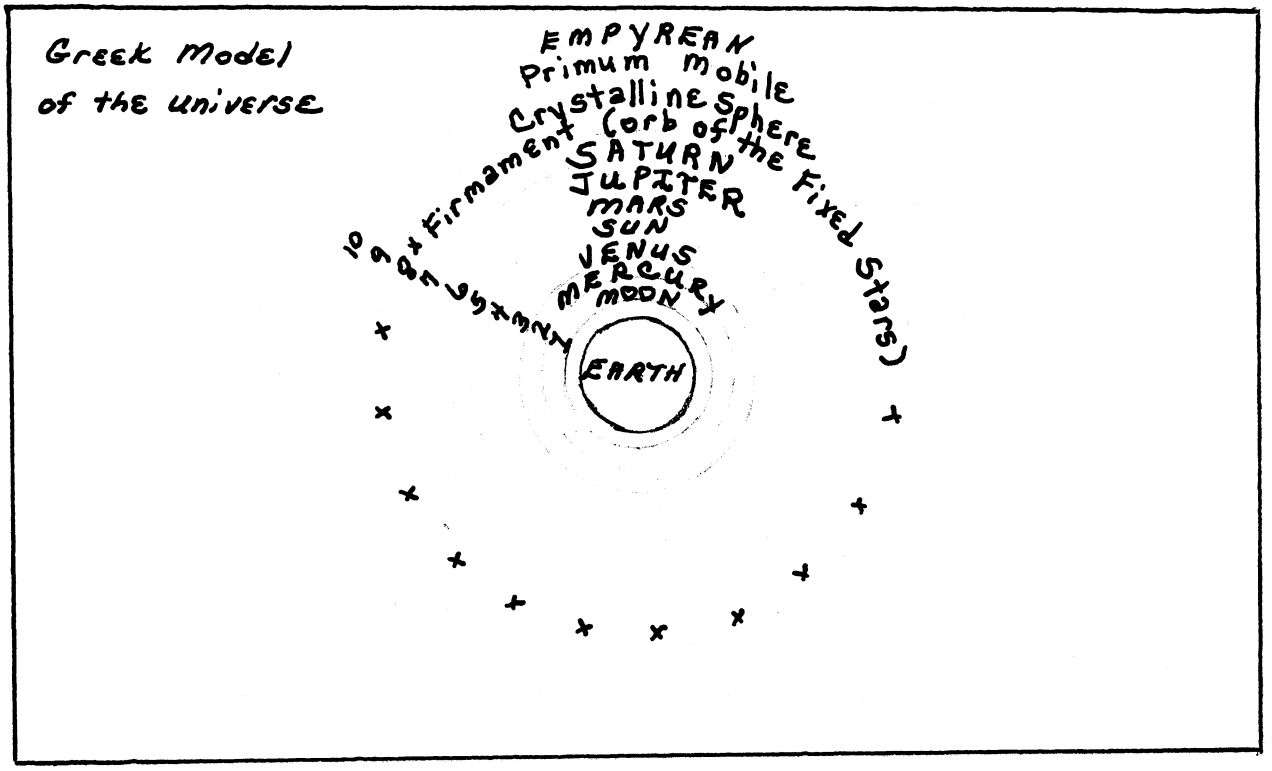
[31] Ibid., p. 93.

[32] Blum, Cameron, and Barnes, p. 191.



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explanation of the above Greek model of the universe shows that:

> . . . the earth stood unmoving at the center of a series of hollow, transparent spheres that daily rotated around the earth. Each of the crystalline spheres had embedded in it one of the heavenly bodies--the sun, the moon and the five known planets (Mercury, Venus, Mars, Jupiter, Saturn). Next came the sphere of the fixed stars, holding the stars that move about the earth but seem to be motionless with respect to one another. Finally there was an outermost sphere, the primum mobile or "first mover," which provided spin to the spheres nested within it. Beyond lay the "empyrean," where God dwelt. The heavenly bodies . . . were thought to be made of a pure and immortal substance, entirely different from the corrupt and mortal matter that made up the earth.[34]

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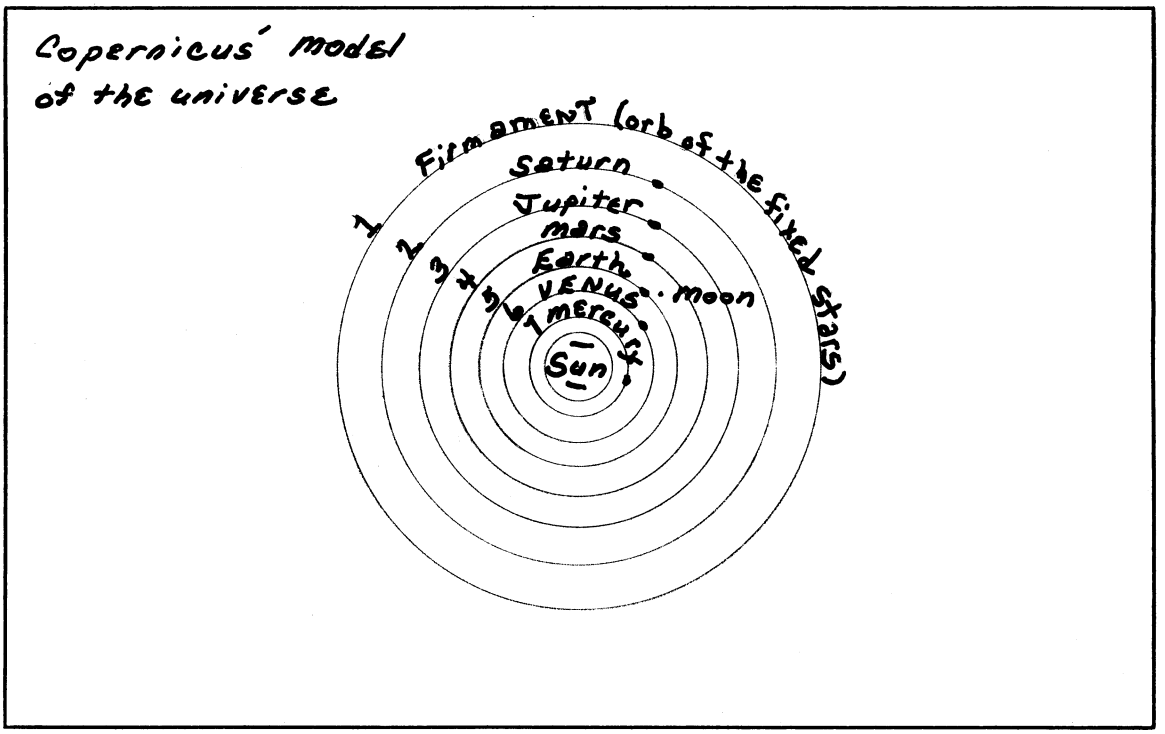
[33] Ibid., p. 189.

[34] Ibid., p. 188.



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In direct refutation of the Greek model, translations from Copernicus' original Latin texts show that:

1. There is no one centre for all the celestial orbits or spheres.
2. The centre of the Earth is not the centre of the World.
3. All the planetary orbits circle around the sun at the centre of them all.

. . . . . .

5. The apparent movement in the firmament is due to the movement of the earth; accordingly the earth turns once a day on its unchanging poles, while the firmament and ultimate heaven remain unmoved.
6. Whatever movement we find in the sun is due to the earth and our orbit in which we are rolled around the sun; and thus the earth has several motions.
7. The apparent irregularities in the movements of the planets are to be ascribed to the motion of the earth . . .[36]

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[35] Ibid., p. 191.

[36] Taylor, p. 96.

The essence of the hypothesis eventually became known, and Copernicus suffered verbal chastizement from various thinkers, including Martin Luther. Religious leaders from both camps of Christianity denounced the hypothesis as being nothing but a rash denial of scriptural teachings. They based their argument around verses twelve and thirteen in Chapter Ten of the Book of Joshua. The quote states that prior to a battle between the men of Israel and the Amorites, Joshua said:

> "Sun, stand thou still at Gibeon,
> and thou moon in the valley . . .
>
> and the sun stood still and the moon stayed, . . ."[37]

Because Copernicus' critics felt that the Bible did in fact state nothing but the truth, they treated the heliocentric theory as a speculative nuisance rather than a dangerous threat.

"The man who paved the way for a more satisfactory explanation of planetary motion was Galileo, professor of mathematics at Padua, and a man of many interests who examined every scientific subject under discussion in his day. In the study of the universe his first great contribution was to convince most people that the Copernican system . . . was fundamentally sound."[38] With the aid of a telescope,

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[37]Jos. 10:12-13.

[38]David Maland, Europe in the Seventeenth Century (London: MacMillan Company, 1966), p. 48.

Galileo discovered, among other natural phenomena, sun spots and the moons of Jupiter. Thus, he convinced himself of the validity of Copernicus' theory and set out with scientific zeal to persuade the unappreciative Renaissance minds. The crusade met with violent opposition. "He soon discovered . . . that scholars, philosophers, and churchmen . . . opposed the Copernican system because they felt that it flew in the face of theology and common sense. . . ."[39] Part of the threat to theology has been discussed in the case of Copernicus, but the threat to common sense deserves special attention because of the problems it produced for the seventeenth century.

As noted earlier, the Renaissance and Reformation were largely responsible for the breakdown of the universal authority of the Catholic Church. Once its totalitarian position began to crumble, the criterion that had been the mainstay for European thought disappeared with it. Salvation of the soul, which was still of prime importance to sixteenth and seventeenth century western man, was being offered by every fragment of the Christian religion. Each possessed its own doctrine and each claimed that eternal life could be gained only through its own method of worship. The pain of doubt had burdened the Christian population since the Reformation. With the advent of the new science,

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[39]Blum, Cameron, and Barnes, p. 196.

which was effectively introduced by such men as Galileo and Kepler, Western man was forced to re-evaluate his whole concept of knowledge.

Prior to the introduction of the new science, European man, under the guidance of scripture, was convinced that his knowledge was, in fact, truth. He had little reason to feel that his ideas concerning the nature of the universe and his central position in relation to it could be false. There was also little serious speculation about a universe that extended infinitely back or infinitely forward in time. In short, it existed in the finite bounds of both time and space.[40] Creation presented no problem, for the complete story could be found in Genesis along with the description of the fall of man. So when the climate of intellectual security was seriously threatened by theoretical science, Renaissance man reacted with natural disbelief.

Galileo's confirmation of Copernicus' heliocentric theory not only disproved the validity of traditional beliefs, but it questioned the very possibility of man's ability to find knowledge that was true and final. To the common man, Copernicus' theory did not prove to be a crushing problem for most of them could readily point out that sensory observations clearly showed that the earth did not move and the sun did. However, Galileo's

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[40]See diagram, p. 23.

revelations based on scientific instruments and refined mathematics eventually made an impact on serious thinkers. This resulted when he discovered "that the movement of bodies anywhere in the Universe were subject to the same laws, and therefore could be explained in mechanical terms."[41] His observations dispelled the traditional and revered study of Aristotelian physics, and Renaissance man saw the destruction of yet another criterion.

By the end of the sixteenth century, Western man was left with very little of what could be considered certain and undeniable truth. The intellectual upheavel of the Reformation and the consequent splintering of Christianity destroyed the universal authority of the Church. The new scientists, forsaking both tradition and established authorities, undermined man's personal tools of learning and judgement by casting doubt on the ability of the senses to report an object as it was in itself, not just as it appeared. The rebirth of ancient learning resulted in the revival of the sceptical attitude which, because of the general climate of intellectual chaos, became the rule rather than the exception for leading thinkers. This feeling infected most men of all educational levels. The individual, free from complete intellectual domination, began to assert this newly won freedom in a hesitant fashion. The uncertainty was caused by the

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[41] Bush, p. 314.

possibility that one could evaluate the truthfulness of a particular statement according to one criterion, only to find that other individuals could invalidate the statement by using other criterions. Thus, forced to fall back upon himself, man found that even his trusted senses could not be counted upon to serve him with complete faith. The still influential Church fought for minds with medieval arguments on the one hand, and with such persuasive instruments as the Inquisition on the other. Finally, "Deprived of his traditional patterns and rules of judgement and of choice, man . . . [felt] himself lost in an alien and uncertain world, a world in which nothing was certain and everything was possible."[42]

The philosophers of the late Renaissance period made every effort to break completely from the scholastic system with its buttress of Aristotelian logic. "With reservations as to Francis Bacon, their systems presented a certain magnificent confusion, and lacked a sure foundation in some irrefragible basic principle."[43] With learning fragmented there was no basic theme which would encompass all knowledge and give it final meaning. Therefore, sixteenth century philosophers began to formulate their thoughts into various methods that were personally comfortable

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[42]Alexand Koyre, Descartes: Philosophical Writings, ed. and trans. Elizabeth Anscombe and Peter Thomas Geach (New York: Thomas Nelson and Sons Lts., 1961), p. ix.

[43]Taylor, p. 109.

but not reliable in the sense of being a universally accepted system. "Thus confusedly equipped, they were at sea with their own thinking upon the metaphysics of the universe. . . . Their thoughts in general sprang from their imaginations pricked by the new physical theories and enlarging knowledge of the world."[44] To add to the disorder, both Catholic and Protestant leaders were unreceptive to new ideas influenced by the new science. The Italian philosopher Giordano Bruno was burned at the stake in 1600 by the Inquisition for advocating a naturalistic and mystical pantheism. Other advocates of philosophy based on or influenced by new science were sternly warned not to propagate ideas that ran contrary to current theology.

By 1600, most of the authoritarian obstacles to intellectual freedom were rapidly losing influence. Scientists were still under the spells of mysticism, and the classical method of deduction. But advances in mathematics and science exposed weaknesses in the method of reasoning from the general to the particular. Philosophers of this period were viewed as early modern due to the fact that they made a final break with the medieval method by introducing a new method using an inductive process. The application of this new method of reasoning in one sense completed the transition of thought from the Middle Ages

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[44] Ibid., p. 110.

to the modern period. The influences of medieval thought, scholasticism, mysticism, and the Renaissance continued, but to progressively lesser degrees. The new scientists haphazardly began the transition phase, but it was left to the first of the modern philosophers to co-ordinate the movement and at the same time lay the foundations for modern philosophy.

CHAPTER III

DESCARTES AND SCEPTICISM

Rene Descartes, the French philosopher who later became known as the father of modern philosophy, was born in 1596, the son of a lawyer who was a member of the lower nobility. When he reached the age of eight, his father enrolled him in the famous Jesuit school at La Fleche. Here Descartes was given a solid background in the typical scholastic curriculum. His reaction to the scholastic method is recorded in his Discourse on Method. ". . . I was ardently desirous of instruction. But as soon as I had finished the entire course of study . . . I found myself involved in so many doubts and errors that I was convinced I had advanced no farther . . . than the discovery . . . of my own ignorance."[45] However, the Jesuits did succeed in opening Descartes' mind to the study of mathematics and science. As a young student, his father sent him, with a substantial allowance, to the city of Paris. "For a youth of seventeen he behaved himself

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[45]Rene Descartes, "Discourse on the Method of Rightly Conducting the Reason and Seeking Truth in the Sciences," French Philosophers From Descartes to Sartre, (ed.) Leonard M. Marsak (New York: The World Publishing Company, 1961), p. 30.

extraordinarily well in the circumstances. . . . It was, however, comparatively easy for him to keep his head, for, young as he was, he had already developed the inner detachment, . . . and the dislike of society, that always characterized him."[46] Instead of indulging in entertainment and diversions, he began a serious study of mathematics under the guidance of the famous French mathematician, Mydorge. Descartes testifies to his own almost passionate love of mathematics in the Discourse on Method: "I was especially delighted with mathematics, on account of the certitude and evidence of their reasonings; but I had not as yet a precise knowledge of their true use; . . . thinking that they but contributed to the advancement of the mechanical arts."[47] By the time he had reached age twenty-one, the lure of travel and adventure drew him from Paris to Holland. There he entered the army of Prince Maurice of Orance and began a career that saw him serving in various armies throughout Europe. Finally in 1629, the "settled in Holland where for twenty years he devoted himself to developing his philosophical system and

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[46]Fuller and McMurrin, p. 55.

[47]Descartes, "Discourse on Method," p. 32. (The reference to his ignorance as to the true use of mathematics is meant to show that prior to his discovery of analytical geometry, Descartes was under the impression that mathematics were applicable almost entirely to the mechanical arts. The Discourse on Method was written in 1637, while the discovery was made arcund 1617.)

publishing his works."[48] During this time he began corresponding with the brilliant Queen Christina of Sweden. Eventually he accepted an invitation from her to tutor her in Cartesianism and to draw up a plan for a proposed academy. He arrived in Stockholm in the late fall and as a result of a severe winter contracted pneumonia and died in February of 1650.

"Descartes' life and personality partake of the drama of his age. It [was] a life of passionate devotion to research, of discoveries, of sudden illuminations, of wandering and unrest, of bitter controversy."[49] Probably his attraction to this type of life forced his move from Paris. The liberal climate of Holland, recently enhanced by independence from Spain, provided an ideal setting for Descartes' work. But such was the situation that even there strong opposition to his "atheistic" writing forced him to seek protection against religious outrage. The rector of the University of Utrecht attacked the Cartesian system because it proposed that the earth did move and thus was not the center of the universe. Also, word of Galileo's treatment at the hands of the Inquisition moved Descartes to leave unpublished a work concerning the

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[48]Frank Sewall in a special introduction to The Methods, Meditations, and Philosophy of Descartes, trans. John Veitch (New York: Tudor Publishing Co., 1901), p. vii.

[49]Ralph M. Eaton (ed.), Descartes, Selections, (New York: Charles Scribner's Sons, 1927), p. xii, xiii.

physical operation of the world. Thus the devout Catholic, who realized the value of the new science, was embroiled in controversy with both Catholic and Protestant leaders. With this confusion in mind, Descartes wrote what he finally considered to be an answer to the scepticism produced by the Renaissance and a guide or criterion for the search for knowledge that was true and final. Part of his attempt to combine the traditional beliefs with the new scientific method was termed the "Meditations."

The "Meditations" were designed in part to be experienced by serious sceptics willing to set themselves in a spirit of deep reflection. Thus, Descartes regulates the tone of the discussion when he writes in the preface: "I would advise none to read this work unless . . . they . . . are able and willing to meditate with me in earnest, to detach their minds from commerce with the senses, and . . . to deliver themselves from all prejudice. . . ."[50] With this mental attitude in mind, he moves to the "First Meditation" in which he proposes to doubt all his former beliefs. It is not his intention to establish as false all his former opinions, but only to verify their trustworthiness. Previous to this personal state of objectivity, Descartes reports that all his knowledge came to him

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[50]Rene Descartes, "Meditations on First Philosophy," From Descartes to Locke, (eds.) T. V. Smith and Marjorie Grene (Chicago: The University of Chicago Press, 1957), p. 51.

through the senses. However, "I observed that these sometimes misled us; and it is the part of prudence not to place absolute confidence in that by which we have even once been deceived."[51] He asks: are our senses trustworthy? The new science of the period, as stated earlier, forced man to consider this question. Descartes carries it to the extreme. After satisfying himself that any type of knowledge obtained through the senses is subject to doubt, he then attacks the physical reality of those objects that the senses perceive. He considers the fact that his eyes readily report the shape, color, and size of an object, but this same object has appeared to him many times while he was sleeping and his eyes were closed. But, as he concludes, "It must be admitted . . . that the objects which appear to us in sleep are, . . . painted representations which could not have been formed unless in the likeness of realities . . . and, therefore, . . . are not simply imaginary, but really existent."[52] This problem was in reference to material objects which, as yet, could not be considered as true and real. Abstract thinking such as in arithmetic and geometry, which do not bother with existence, seem at least to be certain. For, as he states: "Whether I am awake or dreaming, it remains true that two

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[51] Ibid., p. 56.

[52] Ibid., p. 57.

and three make five, and that a square has but four sides. . . ."[53] But to doubt even this conclusion, he considers the possibility that God has purposely deceived him. This part of the "First Meditation" is particularly interesting because he immediately rejects the idea that God, being all-good and all-powerful, would consider the role of a deceiver. Instead, Descartes substitutes a powerful demon, "who is at once exceedingly potent and deceitful, and has employed all his artifice to deceive me: . . ."[54] Yet the substitution was in no way demanded by ecclesiastical pressure or concerned directly with theology. The demon represents a final move to put the reader in a state of complete doubt. The invention of the demon as the cause of deceit represents the strongest attempt by Descartes to remove himself from the influence of his previous knowledge. For, as he states: "Those old and customary opinions perpetually recur, . . . even almost against my will. . . ."[55] When, at the end of the "First Meditation," he sums up the difficulty of escaping completely from old opinions, he promises himself that, "I will continue resolutely fixed in this belief [of the demon] . . . and guard with settled purpose against giving my assent to what is false, and

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[53] Ibid., p. 58.

[54] Ibid., p. 60.

[55] Ibid., p. 59.

being imposed upon by this deceiver . . ."[56]

Other philosophers, under the influence of, or reacting against scepticism, attempted to prove the invalidity of all types of knowledge but never all knowledge itself. "Descartes, however, was willing to consider the most radical and devastating of sceptical possibilities, that not only is our information deceptive, illusory and misleading, but that our faculties, . . . may be erroneous."[57] By carrying the tools of scepticism to the highest possible level, he was able to set aside everything concrete and begin laying the foundations of the search for truth in an environment void of all possible error. Thus he hoped to find certainty through doubt.

The "Second Meditation," the most critical of the six, continues with the same spirit of inflexible doubt set by Descartes in the first. "I suppose, . . . that all the things which I see are false; I believe that none of those objects which my fallacious memory represents ever existed; . . ."[58] At this point there is no traditional knowledge left for him to consider that might be solid enough to resist doubt. "Is there not a God or some

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[56]Ibid., p. 60.

[57]Richard H. Popkin, The History of Scepticism From Erasmus To Descartes, (New York: The Humanities Press, 1964), p. 182.

[58]Descartes, "Meditations," p. 61.

being, . . . who causes . . . thoughts to arise in my mind? But why suppose such a being, for it may be I myself am capable of producing them?"[59] Descartes concludes from this that regardless of all the doubts concerning his senses, memories, opinions, and the external world, he was at least persuaded to doubt by something. If this is possible, then something within him, that which could be deceived, must undoubtedly exist. For, "I assuredly existed, since I was persuaded."[60] This discovery is the first stone of a new foundation, which for Descartes and hopefully for the sceptical reader, proves that something within ourselves does in fact actually exist. Thus, by pushing scepticism to its very limit, Descartes points out that: "The process of doubting compels one to recognize the awareness of oneself, compels one to see that one is doubting or thinking, and that one is here, is in existence."[61] Though proof of the truthfulness of his existence is now beyond doubt, Descartes finds that this is not enough to establish a criterion based solely on just this fact. He finds that after contemplating those receptacles of knowledge which he previously thought to be reliable, that the only mode of awareness which

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[59]Ibid., p. 61.

[60]Ibid., p. 61.

[61]Popkin, p. 188.

could possibly account for his existence is the mental process of thinking. "This alone [thinking] is inseparable from me. I am--I exist. . . . I am, . . . a real thing, and really existent; but what thing? The answer [is], a thinking thing."[62] To test the reliability of his thinking, Descartes uses the example of a ball of wax. In observing the wax, the senses report it to be light of color, solid, smooth, and even sweet tasting. These are the common attributes of wax. However, when the wax is heated, the senses report radical changes in sight, touch, taste, and smell. The change is so drastic that if one were relying entirely upon one's senses he would be unable to report that the liquid was still essentially wax, but in a different form. Descartes finds that even though the state of the subject has entirely changed he is still quite confident that it is wax. Discounting his senses as the final source of information, he concludes that he knows the liquid is wax because the capabilities of his mind enable him to evaluate the different states of the wax. Summing up the experiment and its relation to the problem under consideration, he writes:

> But, finally, what shall I say of the mind itself, that is, of myself? for as yet I do not admit that I am anything but mind. What, then! I who seem to possess so distinct an apprehension of the piece of wax--do I not know myself, both with greater truth and certitude, and also much more distinctly and clearly?

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[62]Descartes, "Meditations," p. 63.

> For as I judge that the wax exists because I see it, it assuredly follows, much more evidently, that I myself am or exist, for the same reason: . . . And what is here remarked of the piece of wax, is applicable to all the other things that are external to me. . . . But in conclusion, I find I have insensibly reverted to the point I desired; for it is now manifest to me that bodies themselves are not properly perceived by the senses nor by the faculty of imagination, but by the intellect alone; . . .[63]

The conclusions of the "Second Meditation" effectively classify the school of philosophy to which Descartes belonged. As noted in Chapter II of this paper, the late Renaissance period saw philosophers groping for a new criterion on which to test the validity of knowledge. Two of the most important schools of thought that arose from the multitude of quests were the rationalists and the empiricists. The rationalists, represented in this case by Descartes, taught that knowledge of this world could be attained by the use of the intellect and deductive reasoning. One of the most important theories in this school, the one around which Descartes centered the "Meditations" was the belief in innate ideas: "Ideas which are inborn and come with the mind at birth, such as God and immortality."[64] Directly opposed to this view was the school of empiricism which taught that knowledge could be

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[63] Ibid., p. 68. (The term "see" as used by Descartes does not refer to perception by a bodily organ, but to images such as those produced in a dream when the eyes are not in use.)

[64] Runes, p. 146.

gained only by experience which was received solely by way of the senses. Naturally innate ideas were considered by this school as, at the most, merely illusionary fancies. But to the rationalist, innate ideas such as Descartes' cogito ergo sum provided a basis not only for the reversal of doubt, but for the foundation of certainty.

Prior to the beginning of the "Third Meditation," Descartes accomplished three things: (1) moved from complete doubt to an understanding that he exists; (2) using the same method, he discovered that he was a thinking thing, and; (3) anything which he could perceive as clearly and distinctly as the cogito must be certain. Now he moves in the "Third Meditation" to prove the existence of God. In the earlier meditations, superior beings were mentioned, but only as fancies of Descartes' imagination. In order to understand and appreciate his proofs of God, it is necessary to grasp the meaning in which he uses the term "idea." When one thinks of a man or a tree, a mental activity within our mind produces a reasonably clear image of the above mentioned objects. Descartes claimed there are three types of ideas that can be associated with mental activity: innate; adventitious; and factitious. The innate ideas were described earlier; the adventitious ideas are those that come from sources outside of the mind; and the factitious ideas are inventions of the individual mind, such as music or poetry. In the attempt to prove

the existence of God, he finds that only those ideas labeled as adventitious are valid in constructing proofs for the existence of God. The first proof introduced is commonly called causality. Descartes illustrates it by pointing out that ideas of men (or animals, or even angels) could come from within himself, but "there . . . remains, the idea of God, in which I must consider whether there is anything that cannot be supposed to originate within myself."[65] To discover whether there are any attributes of God that could not originate within the mind, he lists the qualities under consideration. "By the name God I understand a substance infinite, independent, all knowing, all powerful, and by which I myself, and every other thing that exists, if any such there be, were created."[66] After considering these and contemplating their ultimate meaning to the thinker, he concludes that something outside and independent of his thinking mind does exist.

> And thus it is absolutely necessary to conclude, from all I have before said, that God exists: for though the idea of substance be in my mind owing to this, that I myself am a substance. I should not however, have an idea of an infinite substance, seeing I am a finite being, unless it were given me by some substance in reality infinite.[67]

To further fortify the proof, Descartes considers the possibility that his own creation was caused only by his

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[65]Descartes, "Meditation," p. 77.

[66]Ibid., p. 77.

[67]Ibid., p. 78.

parents or some being less perfect than God. But he concludes, "this cannot be: for as I said before, it is perfectly evident that there must at least be as much reality in the cause as in its effect; . . . I could not possibly be of such a nature as I am, and yet have in my mind the idea of a God, if God did not in reality exist, . . ."[68] The important fact to remember in studying the "Third Meditation" is that Descartes intended it to be read as a meditation in the strict sense of the word. His Jesuit education included numerous retreats which were designed to remove the student from worldly influences and place him in an atmosphere favorably receptive to the slow penetration of religious truth. From this exercise, the retreatant was expected to emerge at least partially re-orientated toward realization of the position of the individual man in relation to the Supreme Being. Descartes hoped that serious sceptics and atheists willing to follow his method of reasoning would in fact carefully reorientate themselves and engage the Cartesian criterion as a judge for the validity of knowledge.

The "Fourth Meditation" dealing with truth and error explains the origin of defective thinking. "I am conscious that I possess a certain faculty of judging, which I received from God, . . . it is likewise certain

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[68] Ibid., p. 81, 83.

that he has not given me a faculty that will ever lead me into error, provided I use it aright."[69] In the previous meditations, Descartes established the fact that God was all-good and could not deceive him. But faulty thinking certainly did exist, and Descartes' novel answer for its existence was that error was entirely due to ourselves. He explains it in this manner: Each individual has within himself two mental powers, the power to think and the power to make judgements. Part of the power of thinking consists of what is called understanding. But since we are finite beings, our understanding is, of necessity, not a perfect understanding. It follows then that lack of knowledge could be the cause of error. Descartes, however, rejects this idea and places the blame on the second mental power, that of judgement, or the will. Lack of understanding, which because of boundaries set upon the intellect, is common to all finite beings. Therefore, while the power of understanding is limited, the use of the will is not. Lack of understanding is merely ignorance, but misuse of the will is error. As stated by Descartes:

> Whence, then, spring my errors? They arise from this cause alone, that I do not restrain the will, which is of much wider range than the understanding, within the same limits, but extend it even to things I do not understand, and as the will is of itself indifferent to such, it readily falls into error and

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[69] Ibid., p. 84.

> sin by choosing the false in room of the true, and evil instead of good.[70]

The formula for avoiding error is to simply follow the method of reasoning set down in the "Meditations." If we make assertions based only on clear and distinct ideas, then we will avoid mistakes. However, if through our willfulness we attempt to transcend clarity, then the threat of error arises. As Descartes sees it, understanding and knowledge are limited to definite bounds, but the will, because it is not limited, enables the individual to go far beyond the resources of his knowledge. When over-extension of the will occurs, then resulting claims are not to be trusted. Thus, "as often as I so restrain my will within the limits of my knowledge, that it forms no judgement except regarding objects which are clearly and distinctly represented to it by understanding, I can never be deceived; . . ."[71]

The "Fifth Meditation" contains Descartes second proof for the existence of God. The argument, based on the ideas of St. Anselm, is commonly called the ontological proof. However, unlike St. Anselm, Descartes uses a careful, methodical approach designed to verify the validity of his innate idea of God. The argument begins with a return to the clear and distinct ideas concerning

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[70] Ibid., p. 88.

[71] Ibid., p. 91.

mathematics. Descartes finds that his ideas of number, extension, figure, and size, that is, ideas of mathematical properties, do not depend on his thinking for their truth content. "They do not come to us through sensation: they are innate and express the nature of our mind, [and] are elicited by our attention to what is in us."[72] So Descartes discovers we do not invent them, yet we do conceive them as clear and distinct ideas and, therefore, they exist. In relating this type of reasoning to the existence of God he asks:

> But now if because I can draw from my thought the idea of an object, it follows that all I clearly and distinctly apprehended to pertain to this object, does in truth belong to it, may I not from this derive an argument for the existence of God?[73]

In order to clarify this proposition, he dwells upon the example of a triangle. He finds that if he thinks of a triangle he must also think of its form, nature, and essence. The idea of a triangle cannot be formulated without its attending characteristics, that is, they cannot be separated. Along this same line of reasoning, he realizes that he has "the idea of a God, . . . that is, the idea of a being supremely perfect."[74] Just as he found it impossible to separate the characteristics of a

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[72]L. F. Beck, The Metaphysics of Descartes, (Oxford: The Clarendon Press, 1965), p. 217.

[73]Descartes, "Meditations," p. 93.

[74]Ibid., p. 93.

triangle from the idea of a triangle itself, so too, the characteristics of the Supreme Being cannot be separated from God. Thus he reasons "that the existence can no more be separated from the essence of God, than the idea of a mountain from that of a valley, . . . so that it is impossible to conceive a God, . . . to whom existence is wanting. . . ."[75] The possibility of more than one God is dismissed, and once he concludes the second proof for the existence of God, he states the central theme of his criterion for truth.

> Although the right conception of this truth the existence of God [has] cost me much thinking, nevertheless at present I feel not only as assured of it as of what I deem most certain, but I remark further that the certitude of all other truths is so absolutely dependent on it, that without this knowledge it is impossible ever to know anything perfectly. . . . And thus I very clearly see that the certitude and truth of all science depends on the knowledge alone of the true God, insomuch that, before I knew him, I could have no perfect knowledge of any other things.[76]

The closing words of the "Fifth Meditation" clearly demonstrate Descartes' attempt to close the already sharp division between science and religion.

The sixth and last meditation deals with the reality of material objects. Using the reliability of mathematics as a background, Descartes writes: "I at least know with certainty that such [material] things may

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[75] Ibid., p. 93, 94.

[76] Ibid., p. 96, 97.

exist, in as far as they constitute the object of pure mathematics, since, . . . I can conceive them clearly and distinctly."[77] But he finds that this conclusion in no way accounts for the confused ideas of sense perception. Descartes admits that "I am accustomed to imagine many other objects besides that of corporeal nature which is the object of pure mathematics, as, for example, colours, sounds, tastes, pain, and the like, . . ."[78] At this point, it is strange to see that Descartes, in the effort to prove the reality of material things, has returned to the cause of his original doubts, that of perception through the senses. In the past, the senses had provided Descartes with an awareness of himself and the external world. And, as he states: ". . . it seems that they could not have proceeded from myself, and must therefore have been caused in me by some other objects; . . ."[79] Another factor that forces him to return to knowledge received by the senses is that ideas entering through these channels are much more clear and vivid than those brought about by meditation. Further, the power that produces these sensations must be of a corporeal nature and somewhat represent what the senses perceive it to be. Near the end of the last meditation, Descartes sums up this problem, as well as

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[77] Ibid., p. 97.

[78] Ibid., p. 99.

[79] Ibid., p. 100.

others dealt with in the earlier meditations. He concludes:

> . . . I ought not in the least degree to doubt of the truth of those presentations, if, after having called together all my senses, my memory, and my understanding for the purpose of examining them, no deliverance is given by any one of these faculties which is repugnant to that of any other: for since God is no deceiver, it necessarily follows that I am not . . . deceived. But because the necessities of action frequently oblige us to come to a determination before we have had leisure for so careful an examination, it must be confessed that the life of man is frequently obnoxious to error with respect to individual objects; and we must, in conclusion, acknowledge the weakness of our nature.[80]

Intellectual circles did not accept the conclusions Descartes reached in the "Meditations." Moreover, the sceptics tried to show that the "Meditations" were just a collection of illusions based on one man's opinion. "The traditional thinkers saw Descartes as a vicious sceptic, because his method of doubt denied the very basis of the traditional system."[81] In reply to the attacks, Descartes pointed out that the principles on which the criticisms were based were themselves open to question. Though most philosophers and theologians voiced nothing but disgust for the Cartesian philosophy, the new scientists readily employed Descartes' methods as a fresh and certain approach to the study of science. Thus, by urging men of science to forsake the old authorities, Descartes opened the way for personal, independent judgement based on reason. This in

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[80] Ibid., p. 113.

[81] Popkin, p. 197.

turn resulted in the laying of the foundations for experimental science and modern philosophy.

The whole philosophy of Descartes was dominated by his zealous persuit of certainty. The "Meditations," as a vehicle of this quest, can be looked upon not so much as a proof of reality, but as a method of achieving a sense of certainty. "For Descartes, science must undertake to give the kind of knowledge which secures human felicity, and to achieve the kind of certainty which had belonged properly to faith."[82]

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[82]Marthinus Versfeld, An Essay on the Metaphysics of Descartes, (London: Methuen & Co. Ltd., 1940), p. 169.

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