

## 20 Natural Philosophies at War in 17th Century II

### The Defeat of Magical Neo-Platonism

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We have to deal with the reasons for the manufacture and acceptance of the mechanical philosophy. This has to do with a conflict among natural philosophies in the 17th century (especially the early 17th century). As we shall see, it has less to do with the attempt to falsify Aristotelianism than it has to do with the attempt to destroy a new dramatic challenger, Neo-Platonism, especially in its magical manifestations. This is a difficult story, the subject of much historical research these days. The answer obviously isn't Whiggish--mechanical philosophy triumphed because it was right--(I devote a whole third year subject to this in alternate years--to the sociology and politics of the rise and fall of world views in the 17th century and I have one Chapter to condense it down for you now).

1500-1650 and especially in the last 50 years, saw a rising tide of belief in a family of Neo-Platonic natural philosophies often, but not always, with magical overtones or interests. In the early 17th century (1600 and 10s) these philosophies were making most of the running. Look at the time here--the mechanical philosophies were first devised just at the time when the magical neo-Platonic natural philosophies were hitting their stride. There is a reason for that--the mechanical philosophies were designed, to a very large degree, to counteract these neo-Platonic philosophies.

What is a neo-Platonic natural philosophy? Partly they trace their ancestry to Plato--the Greek philosopher, teacher of Aristotle--and also to neo-Platonists who were followers in the first 3 or 4 years AD, some of whom had been Christians, like St. Augustine, and some of whom had remained pagans. Ancient neo-Platonism had taken on a much more religious, spiritual and mystical cast compared to what Plato had originally written. What were the chief characteristics of neo-Platonism? First of all, going back to Plato himself, there was a fundamental commitment to the mathematical character of reality. To the belief that underlying appearance (superficial observation) there was a mathematical blue-print to nature. Copernicus was a mild neo-Platonist, Kepler was a stronger version of the same. (They were both neo-Platonists to a considerable degree, hence their stress on the harmonies as indicators of truth). The kind of mathematics that this blue-print was written in was a special kind. The best way to understand this is to view mathematics the way an architect or a musician viewed mathematics, for it is a question of aesthetic beauty, elegance, simplicity. A melody or building is harmonious or beautiful ultimately because of the nice way that it is mathematically set up. They were looking for symmetry and elegance in the mathematical relationships.

The mechanical philosophers were committed to a mathematical description of reality; they were committed to a belief in atoms and their motions that were quantifiable. But to use a strained analogy, the mathematics that mechanical philosophers were interested in was kind of drab descriptive mathematics, like that of the engineer or the accountant. The neo-Platonists mathematics is constructed for beauty. Only then do you know that you have the truth by a beautiful piece of mathematics emerging from your empirical investigations.

There is something else in neo-Platonism (a little more dodgy from the stand-point of mechanical philosophy). Mathematics, to the neo-Platonists, was not just harmonies and symmetries in the physical world but there was also a mystical mathematical

element, a dimension where one used certain esoteric or mystical approaches in mathematics to obtain supernatural, religious and spiritual knowledge.

Their basic approach to this had been borrowed from a medieval Jewish tradition called Cabala which was a way of mathematically manipulating the letters and words in the Bible in order to get different statements, and to change the words and the real meaning. This concept was taken over by some of the wilder neo-Platonists (Bruno for example) and Christianised in the 16th century. It became, as it were, the tip of the mathematical iceberg as far as the neo-Platonists were concerned. It wasn't just looking for the harmonies in the motions of the planets, the way Kepler did, it was a possibility of a mystical mathematical revelation of supernatural knowledge. Mathematics is the key.

Now the next thing we have to look at in neo-Platonism is the basic view of reality--their ideas about matter and the organisation of matter. Neo-platonism works with two basic concepts--matter and spirit. Matter is nasty and grubby and corrupt, whilst spirit is nice and good and powerful. There are all kinds of degrees of spirit, and basically it is a matter/spirit dualism. Reality is a hierarchy of being based on the balance of matter and spirit in any given type of thing. So some things are low--mainly matter and very little spirit--and some are high and good for they have more spirit and less matter. It's a status system running from God at the top (who is the best instance of spirit) down to brute matter at the bottom which is really degraded and worthless. It's odd from this perspective that the mechanical philosophers make the whole of nature out of such spiritless dead matter. This would have thrown neo-Platonists into considerable disagreement with them.

Some examples of how this hierarchy works: You look up into the heavens and you see different kinds of bodies and some are better than others in terms of spirituality. Up in the heavens obviously the Sun is the best thing because it is a material body but it's almost purely spiritual for it gives out light, which is a spiritual power; it gives out heat which is a spiritual power, and the Sun also obviously accounts for the presence of life on Earth. The Sun, like the planets, probably has its own soul or intelligence which accounts for it being such a nice spiritual thing.

The planets are a bit lower than the Sun in terms of 'goodness' for they only give out light but they also have souls. On Earth you find a lot of objects with less, or very little, spirit which grub around in the dirt, but there are things on the Earth that have a considerable amount of spirit, gold and silver, for example. Lodestone, a naturally occurring magnetic iron compound, has spirit, because magnetism is an immaterial force. So everything is put in its place depending upon how 'good' it is -- the amount the kind of spirit it has. Obviously there are high and low degrees of spirit. The Sun seems to be intelligent for it appears to have a kind of soul but little pieces of lodestones don't appear to have souls or minds but they are pretty spiritual for they are giving off some definitely spiritual force. Light, sensation, perception, intelligence--different things have different spiritual capabilities. Most neo-Platonists have an Earth centred universe, by the way, although we have seen that the few Copernicans who are around happen to be more or less neo-Platonic.

Obviously on Earth there are different kinds of things: there is gold, silver, lodestone, rocks, mud, kinds of animals etc. -- Why? The reason there are all these different kinds of things on Earth which have different degrees of spirituality is that they derive their different degrees of spirituality from the stars and planets. There is a fundamentally astrological view of things at the centre of these neo-Platonisms. The stars and planets

spew out qualitatively different types of spiritual power or force, emanations. Grubby matter on Earth is impregnated, spiritualised, variously by these emanations and that is what makes them what they are.

So different types of objects on Earth have different types of astrological origins, which explains their place in the hierarchy and the nature of spirit that they have. You get a system of relationships among things that have similar types of spirits because they are traced to identical astrological origins.

This may sound naive and idiotic, but it is to them a highly elaborate and revealing grid, placed on nature, revealing what nature is really about, rather than what nature superficially appears to be about. Nature is a system of relationships of spirit amongst things on Earth and in the stars. For example, everyone knows that the planet Mars is correctly identified with warfare, bravery, fortitude etc., because Mars spews out spirit of a kind that turns the objects that it impregnates into Martian or Martial type things. For example: iron and iron-ore which is used in warfare, is red and is the strongest metal. Iron shares in the fortitude of Mars and is related/descended from Mars, the red planet--an offspring if you like.

But, there is another system of relations inside the human body, because each part and aspect of the human body has correlations to things in nature and the heavens. The human body is a **microcosm** of the **macrocosm**. The relationships in the macrocosm are mirrored in the relationships of the human body. So there are organs in the human body that is related to Mars -- that is the heart and the blood -- red. Heart: bravery/fortitude.

So you might draw practical conclusions from this. For example, you might just take what I've just said as a bit of knowledge, an insight into the truth of reality, and you might go a step further with this knowledge and **apply it to control and manipulate nature and the things in it**. You might take the step from **knowledge** to **action**--from **knowledge** to **operation**. Paracelsus who was very interested in applying neo-Platonism to practical advantage said "people have anaemia, which is due to not enough of the Martian influence" So Paracelsus concluded: you treat anaemia with medicines containing iron compounds. And that is the reason he did it (and he was justly famous for treating anaemia): nothing whatsoever to do with any theory of haemoglobin or blood chemistry. He also treated syphilis with mercury compounds for astrological and microcosm/macrocosm reasons which we won't go into but he had successes there too. He was quite a successful astrological physician!

This application of knowledge of spiritual relations in nature and of microcosm to macrocosm is called **natural magic** -- aim is control and domination of nature.

Where do human beings fit into this? They have a special place in neo-Platonism and this is very important in the success and popularity of this philosophy. Neo-Platonism has an ennobling view of human beings which poses certain challenges to them as well. They occupy a special place on Earth--they have corrupt bodies made out of matter, but they have the highest level souls on Earth, in that human souls are capable in principle of knowing the entire hidden pattern of nature. Why? Because God, as it were, has programmed into the human soul the potential to know that pattern. With the proper endeavour and proper moral upright enlightened attitude it should be possible for enlightened men to acquire almost god-like knowledge of nature.

So humans are special for they can do that, or are on their way to doing that. But this includes knowledge of physical nature and the operative control over it. More than that, humans have the challenge to improve their souls generally and to rise above any concern of nature at all to knowledge of the supernatural. So there is a challenge to know all of nature and there is also a challenge to get into those higher mysteries. Mystical enlightenment and enlightenment about nature, leading to control of nature, and possibly to knowledge that transcends nature.

The human body is special and unique amongst bodies because it is a microcosm. If you properly understand the human body, it contains within it an exact analogue of the relationships that exists within the larger cosmos. So you have things related to Mars, Venus, the various stars and constellations: patterns of relations that tie the human body, as a kind of code, into the larger pattern of the world. Know the world and you will know the human body and vice versa says Paracelus, because there are two versions--two codes which mean the same thing.

The overall explanation is astrological--you can do your empirical work on the body and on physical nature and you will be getting the same knowledge (if you know how to read it the right way) and if you are a good guy, (because corrupt men cannot do this). They had a word for the search for the application of such natural knowledge, they called it natural magic, as I already pointed out. **Natural magic was knowledge of the hidden spiritual forces and relations in the world, applied for use and control.** It is one thing to know these things, but it is another to use them for manipulation to get out practical results. The idea was that natural magic was not a selfish, grubby pursuit, it was a moral imperative--we should pursue natural magic of that kind to improve everyone's material condition on Earth. That was the ideology, and it was possible.

The problem was that there were two kinds of magic based on knowing the hidden forces and relationships. Natural magic (which we have been talking about), that is understanding astrological influences and manipulating the bodies that are under the corresponding astrological influences, and **Demonic** magic, which was making a short-circuit (a short-cut) going right to the ruling intelligence and minds of the universe--the planetary intelligences elements and the Devil and his associates. Perhaps trying to make contact with God himself (although prayer was excluded here).

According to Protestants, the Eucharist is demonic magic, for the Catholic priest set himself up as a magician and calls down Jesus Christ. **Demonic magic means, trying to make contact with higher personal intelligences and usually the implication is for nasty reasons.**

The paradigm case of demonic magic is the theory of diabolical witchcraft (for remember we are in the middle of the European witch craze). Witches make direct contact and pacts with the Devil for evil purposes. Educated male neo-Platonists were often accused of demonic magic but they were hardly ever put on trial for witchcraft on that basis.

Demonic magic is a sort of rhetorical football. If you were Aristotelian, one of your best tactics would be to accuse **all** these guys of demonic magic and then of course they would deny it saying that "demonic magic *is possible*, but we don't do that, we only do **natural** magic which is legitimate, ennobling, enlightening." Demonic magic is a tricky label that they throw at each other.

Note however, that not all neo-Platonists are interested in the magical program. Copernicus is not interested in magic. Kepler is much more a neo-Platonist than Copernicus but he is not interested in magic. Kepler does astrology but he does not do astrological magic. He just wants to know the influences, he doesn't want to control them or manipulate them.

Magic involved wanting to use the knowledge for practical purposes to manipulate and control those powers. Neither Kepler nor Copernicus were magicians; Paracelsus, Bruno and a lot of the other ones were magicians and they firmly believed in it. It was an exciting prospect about human material, improvement and control over nature. Does this sound a little familiar? Its a lot like what the mechanists want to do -- it's not what the Aristotelian want -- but like the neo-Platonists. The argument between the mechanists and the neo-Platonists is not over whether we should endeavour to control nature, but over which theory is right and how you go about it, not the ultimate aim.

Another example of natural magic is alchemy. The theory was that the various metals grow in the Earth. When they start to grow they begin as the base metals--copper, tin etc--but then if the metals stay long enough undisturbed in the Earth they all grow towards the noble metals-- silver and gold. They thought they had empirical evidence for this from mining lore and things that miners said and believed, but obviously it's a bit difficult to be a miner or to wait around for the gold to grow in the Earth. What you want to do is speed up the process in the laboratory. Alchemy is a natural magical disciple aimed, *not* at creating gold out of nothing, but aimed at accelerating the natural process of growth of gold and silver. How do you do this? You tune into the fundamental process and you learn how to intervene to enhance it, that's the magical bit. Alchemy is not mystical or demonic, it's natural magic, as defined above.

Interestingly, for an alchemist, his own psychic path of personal enlightenment is both the cause and effect of his success as an alchemist. Most alchemists were not in it for the money but for psychic improvement and spiritual enlightenment. According to the theory (this is good 17th neo-Platonism), only the spiritually pure can succeed at alchemy. If you do not have the right attitude you are not going to be able to acquire knowledge of the hidden forces and relations. Nasty, grubby, selfish people are not going to be able to tune in to the underlying processes involved here. Only the upright person can do this, and then he will succeed and then that will be proof that he is upright.

That sounds a little bit Protestant, aligning itself with the Protestant idea of being pre-destined to be saved or damned. People cannot know which they are, and there is nothing you can do to get yourself saved. **But**, if you succeed in business or other worldly vocation, that is an **indication** that you were saved from the start! If you succeed in the secular world that is an indication you were saved from the beginning. Alchemy works on the same basis--I am not saying that all alchemists were Protestants, but there is a pull or affinity in that direction. They seem to have the same psychological dynamics of self-righteous, self-fulfilling delusion.

It is important to understand these neo-Platonic doctrines, especially the ones relating to and legitimating the quest for magical control of nature, for many people were most impressed with them. For many, neo-Platonism was exciting, it was ennobling, it is a challenge, it is very avant garde. What does Aristotelianism have to offer compared to this? No control, no real wisdom, no spiritual perfection, no pay-off. So, in the 16th century, it attracts people who value operation and practice and technics. If you are a man of action, neo-Platonism makes sense of man's desire to control nature. If you are

interested in mathematics you might also be a neo-Platonist. If you are anti-Scholastic for any reason you may be a neo-Platonist. If you value personal experience and enlightenment and had been tinged by those Protestant themes you might become a neo-Platonist (although there were Catholic neo-Platonists too.)

All those motivations for being a neo-Platonist got caught up in the late 16th and early 17th century, in a more exciting or dangerous development. In this period we find the emergence of neo-Platonists who are not only neo-Platonists (not only committed to magic) **but espousing programmes of social and political reform**. They were saying "we can solve the religious problem--we can re-unify Europe--we can make everyone happy and stop the religious wars if we all become magical neo-Platonists." So we get this outpouring of utopian reforming social/political/religious programmes from a neo-Platonic stand-point.

One group that emerges doing this are the original Rosicrucians. They were radical Lutheran, alchemical, magical neo-Platonists proposing (on the basis of magical neo-Platonism) a union of Protestant Europe against the Catholics. Not a viewpoint likely to go down very well at Rene Descartes' Jesuit school.

The background to this sort of development is that the period 1590 to 1620 is a period of intense religious and political tension in Europe. Not so much that everyone is fighting, because everyone has just stopped fighting in France and the Low Countries and Germany, but rather because everyone knew that it was going to start again and when that occurred it would be to the finish (as indeed it was in the 30 Year War which started in the 1618). It was a time of 'Cold War', a lull after 60 or 70 years of reformation and counter-reformation and warfare, civil war, witchcraft, witch-hunting, with everyone waiting for the next round of hot wars to resume. And this intense interlude is exactly the time of Galileo, and it is exactly why he gets into trouble. This is the period when Giordano Bruno and some of these other people surface with these programmes.

What did Bruno want? Well Bruno said the universe is infinite and it is alive and wasn't Copernicus a good guy for showing the Earth moving, since not only does the Earth move but everything moves, and there are an infinite number of Suns and solar systems. Only an infinite universe could have been created by God, he argues, mocking the Scholastic and Greek universe -- the finite universe. Why would a great and all-powerful God make that tiny Greek Medieval universe? What does he do the rest of the time? It is not worthy of God to make a finite universe. Bruno takes another step and identifies God with the infinite universe. God is not some creator over against the universe. He is immanent in this universe; or, if you want to make a slip of the tongue, God is this Universe in all its immensity and spiritual complexity.

Well, at the point Bruno stops being a Christian in effect, and something else very dangerous happens at this point. Magic and religion become inseparable, not just two overlapping spheres. Why? Magic is knowledge of nature, and God has been identified with nature so magical knowledge and religion become the same thing. Bruno was well aware of this. He proposed this viewpoint to all the crowned heads of Europe from time to time as the solution to their problems. "Let's stop having religious wars; lets all become well if not Christians... Brunonians". He was famous and notorious for he also believed in the Cabala too. So Bruno winds up not a Christian. And another thing happens to Bruno, he gets burned alive at the stake by the Roman Inquisition in 1600. Some people think there may be some connection between that and the Galileo affair. Bruno and his teachings rather stuck in the back of the minds of Bellarmine and the

Pope: maybe Galileo was another dangerous free-thinker or maybe he could be made out to be one if that was convenient, depending upon how you look at it.

As for Paracelsus, he was an earlier figure, but he sparks off a movement, Paracelsianism, that crops up whenever there is tension and civil unrest. Paracelsianism bubbles up from the masses. The Rosicrucians were sort of followers of Paracelsus. Paracelsus came from the mining centres of Germany, the economic heart of Europe in the early 16th century. He was interested in mining and practical arts; in technology and medicine (especially folk medicine from 'wise' women) and other useful folk lore. His aim in life was to form a revised medical practice which was *astrological* in order to understand what the organs of the body do and how they can get sick and *alchemical* in order to make the medicines. I gave you an example of Paracelsian medicine before with the cure of anaemia by use of astrologically determined iron compound.

Who was interested in Paracelsianism? Members of the lower middle classes, not so much peasants, but, artisans in general and 'craftsmen' in the medical field, apothecaries, chemists and barber surgeons. Not your University trained M.D.s (for they were against Paracelsus who was saying "I know how to do medicine and not these fellows in the universities"). He was advocating an alternative medicine based in a radical, social reformist oriented magical neo-Platonism. Paracelsianism empowered non-elite people to have a natural philosophy that claimed some control over nature and to have a natural philosophy that they could use to beat up the official University trained elite. So Paracelsianism had this tremendous social glow to it. It was not a natural philosophy for the kind of people we have been studying so far, University trained members of the elite. Paracelsianism was really a natural philosophy for people a bit down the social scale and this didn't play well for other natural philosophers of a more traditional status location..

What was the mechanical philosophy responding to? It was certainly responding to the neo-Platonic world-view (the mathematicism, and the stuff about matter and spirit, although it doesn't like the way it is put there). But it is also responding in particular to the implications of magic and to the social, political, religious agitation of the early 17th century coming from neo-Platonists.

What do mechanists typically want? They want to keep the orthodox relationship between religion and natural philosophy. Whether they are Protestant or Catholic they want the orthodox relationship restored (which is God is the Creator, God is transcendent, God has made nature, God is not identified with Nature). Also, religiously, they do not want mystical experience and enlightenment; they don't want Cabala or anyone claiming personal enlightenment, especially if they are people like Bruno or non-elite natural philosophers, or the followers of Paracelsus. The mechanical philosophers *do* want mathematics and experiment and experience and control over nature. So they are avant garde and progressive in the *same sense* as the neo-Platonists are on those issues but they do not want the religious implications and dangers.

If you like, the mechanical philosophers are intellectually avant garde but socially and politically conservative. Bruno is calling for a religious mystical reunification of Europe; Paracelsus is empowering the lower orders with natural Philosophic knowledge. Your typical patriotic Frenchman like Descartes, or your patriotic, elite Englishman like Hobbes is not interested in programmes that are going to do away with the French or English monarchies. He is not interested in programmes that are going to empower every half-educated artisan, barber-surgeon and apothecary to run around claiming they know what nature is all about. These are university educated men who

are intellectually progressive but socially, religiously and politically conservative and the answer is to invent an alternative. They could no longer return to Aristotle, for he was now deemed to be only suitable for school boys.

The something 'new' was the mechanical philosophy. If you analyse mechanism again the way I did in the last Chapter, you will see that point by point it answers these problems or difficulties or cuts off their possibility. No demonic magic. No mystical enlightenment. No mystical mathematics--no harmonies-- just straight, sober mathematics. Human beings are special, not in some neo-Platonic sense, but just because they have souls and everything else is machines. Yes, we are going to control things and nature, but the present status quo is socially going to work that out, not some crazy scheme of reform. Intellectual reform and conquest of nature first -- social change, religious change, political change nothing doing, except that Aristotelians are now considered 'jerks' too. And that is the ideological position of the mechanical philosophy and of its upholders.

## Dissection of the Three Competing Families of Philosophy of Nature 1620-50

<u>Aristotelianism</u>	<u>Magical-hermetic-Neo-Platonism</u>	<u>Experimental-Corpuscular-mechanism</u>
<p>A. "Biological model of classification and process: world as hierarchy of qualitatively different types of being, pursuing natural, inner-directed goals. Motion or change viewed on organic model as finite, enu-directed process.</p>	<p>(e.g. Dee, Bruno, Fludd, Rosicrucians, A. World as organism: a hierarchy of more or less animate parts, interlinked by bonds of spiritual powers and correspondences. World penetrated to varying degrees by the divine</p>	<p>(e.g. Bacon, Descartes, Boyle, Huygens) A. World as machine: the sum of its corpuscular parts (size, shape, hardness, mobility), and their spatio-temporal relations. Transcendent God needed to create and support. Attempts at distinction between matter and spirit.</p>
<p>B. Knowledge and classification of essential forms and of types of change (especially their final causes).</p>	<p>B. Secret wisdom concerning causal links in nature, the role of the divine in nature and mathematical archetypes and harmonies structuring the world.</p>	<p>B. Reduction of secondary qualities to primary ones entailing: mathematical-mechanical description of experiments and/or manufacture of plausible micro-mechanical models for phenomena.</p>
<p>C. Complete knowledge of nature conducive to contemplative wisdom and preparatory to study of ethics and (in the Latin West) theology.</p>	<p>C. Complete intuition of and participation in world structure for purpose of (1) attaining ever higher levels of spiritual perfection and (2) gaining active control over some natural forces for humanitarian and ethical purposes.</p>	<p>C. Gradual increase of knowledge of laws of nature leading to operative control over some natural processes for material and spiritual benefit, and to knowledge of world structure and of God's creative and providential relation thereto.</p>
<p>D. Passive sense observation is a reliable guide to the properties of bodies and types of change. Reason generalises from sense experience, defines essences, classifies and uses syllogistic logic to demonstrate effects from causes, particulars from universals.</p>	<p>D. Sense as an affectively charged commerce with real things attainable only under certain ethical-attitudinal conditions; leads to fluid notion of "direct experience" ranging from experimental manipulation to intuitive sympathy and participation. Reason as intuitive insight into world structure, role of the divine. Stress on mathematics which also ultimately leads to mystical intuition.</p>	<p>D. Distrust of unaided sense. Subjectivity of secondary qualities. Extension and perfection of sense by experiment, use of instruments, mathematical idealisation. Reason as (non-mystical) mathematics, or "like" mathematics.</p>
<p>E. Logical argument and controversy; observation and classification; still some significant physiology in our period.</p>	<p>E. Alchemy, astrology, natural magic, (demonic magic), three-fold use of mathematics: mundane: applied mathematical arts, celestial: astrology, world harmony, music super celestial: number mysticism, cabbala.</p>	<p>E. Geometry and algebra stripped of mystical overtones; mechanics as paradigm science; attempts to provide corpuscular-mechanical metaphysics for traditional sciences—optics, astronomy and cosmology, physiology, experimental inquiry; chemistry, electricity and magnetism, heat, against mechanistic background.</p>
<p>key: A=Image of World, Leading Metaphors B=Nature of Knowledge C=Goal of Knowledge D=Role of Sense and Reason E=Favoured Types of Inquiry</p>		