

# Aristotle's Four Causes and Tinbergen's Four Whys

By Graham Douglas

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It is shown that the Angular Houses of the typical birth chart deal with similar themes to Tinbergen's Four Questions about the biology of animal behaviour. Aristotle was principally a biologist and a correspondence between his Four Causes and Tinbergen's Whys has been noted by several writers. Although causes are closely connected with change, neither of these two *quaternios* involve time or form a cycle, whereas astrological charts do obviously have a cyclic component as well as a synchronic structure. In response it is interesting to review two sets of four that modern scholars have developed. One by the social anthropologist Alan Fiske claims to identify four fundamental logics of human social relationships, which he has analysed as a series of mathematical structures, similar to the well-known scales of measurement used in data analysis: these are the Nominal, Ordinal, Interval and Ratio scales.

Astrology existed well before sciences and humanities diverged, so if there is such a radical deep structure to human cognition, as Fiske claims, then it ought to be detectable in the humanities too. To test this, I examine the sets of four categories which the historian Hayden White brought together in his book *Metahistory*, to see if they too plausibly relate to the patterns just mentioned. I suggest that the closest connection or analogy between the humanistic and scientific structures exists at the most basic level: between the scales and the so-called 'Master Tropes'. This term was invented by Kenneth Burke, but it derives from the 18<sup>th</sup> Century scholar Giambattista Vico. His book, *The New Science* (1744), was strongly influenced by Francis Bacon, and along with Goethe's work it represented an attempt to hold together the sciences and humanities.

Wittgenstein's concept of family resemblance is suggested as an appropriate context for making comparisons across a wide range of fields.

## Introduction

This essay developed out of a curiosity about the apparent absence of traces of such an influential theory as the Aristotelian Causes in the structure of a chart or in the astrological tradition. In the course of exploring this question I have set off on a wandering through many areas, so that what follows – which is still a work in progress - is a consideration of how the abstract structure of astrology reflects, not so much the structure of facts of the world, but rather that of perception and human cognition.

A good example of this is the colour circle, which represents the way the perception of light in the retina is structured by the computations of the nerves on its way to the brain, into a structure of opponent pairs. And this in turn can form the structural basis - but not the content – of colour symbolism in various cultures (Sahlins 1976).

Lévi-Strauss addressed astrology directly in his conversation with two French astrologers in 1969, where he asserted, against their opinion, that astrology is a reflection of the structure of the human mind (Douglas 2015: 148 - 149), not of the physical world.

But to say just this is to leave aside the fact that an astrological chart is a complex of several sub-structures, often composed of sets of four members, but which apply to different levels of meaning. Thus, while the planets are protagonists of various kinds as in a folk tale, the so-called Houses represent material arenas of action, and the signs have the ability to add their

colourings to both of these. Heuristically the three categories could be likened to verbs, nouns and adjectives/adverbs in an astrological grammar.

It is well-known that both Jung and Eysenck noted a correspondence between the Four Elements and their personality types, and Jung's writings have had a huge influence on contemporary humanistic astrologers (see part 2 below). Eysenck and his wife also contributed to a study of the Gauquelin data, using Eysenck's personality scales (Gauquelin F., Eysenck H. and Eysenck, S., 1984).

However, the Elements are described in terms of qualities, which colour the zodiac signs and also the planets. Bachelard (1943, 19) described the elements as 'the hormones of the imagination' which 'mettent en action des groupes d'images' (putting groups of images into action), thus implying four different types of influence, in which 'l'air imaginaire est l'hormone qui nous fait *grandir* psychiquement' (in which in the imagination, Air is the hormone which makes us *grow*, psychically), being connected with the vertical axis and upward motion.

In astrological symbolism, the Houses are distinct fields of action which make up a complete life. In the next section I will put forward the suggestion that the Houses can be related to Aristotle's Four Causes, once we take into account some modern thinking in biology and ethology. And from there I want to consider some other research in anthropology which suggests a fuller account of human cognitive structures than that which Lévi-Strauss referred to. Lévi-Strauss took the formal structure of myths as a subject for analysis, in contrast to Jungians who attempted to excavate the primordial contents of dreams as elements of a so-called collective unconscious. Lévi-Strauss may well have been influenced by Jung (D'Aquili, 1975) although he strongly disagreed with the latter's essentialism (Quoted in Vilhena, 2014: 41, Lévi-Strauss 1962: 88), but did not attempt to analyse social structures and institutions across societies. This was Durkheim's field of interest and his approach, claiming that it was social structures and institutions that determined thought, was diametrically opposed to that of Lévi-Strauss. And while Lévi-Strauss concentrated on specific areas such as myth, folk tales and kinship, the Durkheimian tradition, as developed by Mary Douglas provides a fourfold analysis of social environments and their accompanying cosmologies, which can be observed cross-culturally. This makes it especially suitable for investigating the persistence of fourfold patterns of the type found in astrology.

My proposal is that by joining ancient and modern knowledge we may arrive to a deeper understanding. In particular, taking fourfold structures to be representations of the 'grammar' of cognition, we may use the meeting of ancient and modern scholarship to more precisely specify their varieties of application.

It is interesting to note that the anthropologist Gilbert Durand (1979) commented that many analytical frameworks used in contemporary social sciences can be seen as fragments of a whole that can be found intact in traditional esoteric thought.

### **Aristotle and causes**

Astrology, of course developed through ancient Greece and up to the early modern period, when Aristotle's writings on physics and biology were very influential. One of his prime contributions was the theory of the Four Causes, yet these seem curiously absent from astrological tradition, so much so that contemporary researchers have had to look very hard

to detect traces of them (Hand 2006). This seems surprising because an astrological chart is a map of a whole person or a situation, at least in the Ascendant version, which is the one most people think of as a chart (Hand, 2006 – no page numbers). But it is believed that only 20% of Aristotle's writings have been preserved, so it is not impossible that he did treat astrological charts (Barnes, 2015: 4).

The notion of cause has changed since the scientific revolution in Europe, after which only one of Aristotle's four causes was privileged due to the ascendancy of mechanical theories in physics – his Efficient or energetic cause. Another, the Material cause was not considered necessary as a fundamental concept in a world thought to be governed by the parameters of mass, length and time, because complexity had been reduced to a matter of forces and collisions, where the whole was equal to the sum of its parts and no more.

In the 19<sup>th</sup> century, Darwin's theory of evolution considered the development of organisms, the characteristics of species, and the concepts of adaptation and fitness - clearly more than could be accommodated by a simple reductive model. Huxley (1942) identified three areas of explanation that he considered vital in biology. These were answers to questions about how an organism acted; how it had evolved; and in response to what environmental conditions it had adapted. Tinbergen (1963) added a fourth to these, concerning the stages of development an organism passed through. Thus, in biology it is apparent that rather than causes in the modern sense, it was answers to questions about functions, behaviours and history that formed the framework of investigation, and these are closer to Aristotle's causes.

The other two of Aristotle's causes are the Formal and the Final, and while the first is relatively uncontroversial in biology since it concerns the characteristic structure which any species exhibits, the second was far more contentious. This is because the Final cause includes the notion of *why* an organism develops in the way it does, and this involves teleology or purposive development. Scientific theories, in order to be accepted as such, were still influenced by physics, and hence could only employ causality from past cause to future effect. Any suggestion of future purpose or reverse causality was too close to religious beliefs for scientists to accept, so Final causes had to be banned. A situation enshrined in what is known as the Central Dogma of molecular biology, that DNA controls protein structure and never the converse, although this is no longer regarded as an article of faith.

Rather than 'cause' in the modern sense, it is better to think of the Four Causes as four essential aspects of an *explanation* – the *why* of an object or animal and its behaviour. So, let us now consider Tinbergen's Four Whys in detail.

A recent article has drawn attention to the close relationship between Aristotle's Four Causes and the Four Questions which the biologist Tinbergen listed as essential to the understanding of biological organisms. I will therefore summarise these findings, following Hladký and Havlíček (2013) (H&H from now on), before going on to consider how this insight may help us identify the four causes within the scheme of an astrological chart.

Tinbergen's Four Whys, they say, are questions related to the following aspects of a particular behavioural – and psychological - problem:

1. Mechanism, or proximate cause, the forces involved in action. Aristotle's Efficient Cause.
2. Function, or ultimate causation, the evolutionary processes of adaptation to environment that have given rise to particular behaviour patterns. Aristotle's Final Cause, involving purpose.
3. Phylogenetic causes, concerning historical evolutionary factors that have affected a species as a whole to evolve in a certain way, independently of its current adaptive function. Aristotle's Formal Cause, the characteristics which make something recognizable as a species or type.
4. Ontogenetic factors concerning an individual's development from fertilized egg to birth to adult; nurture rather than nature. A concept that potentially encompasses the lifelong development of an individual. Aristotle's Material Cause, relating to the stuff of which a being is composed.

The authors go on to point out that, although Aristotle's physics had been abandoned by the 17<sup>th</sup> Century, his biological thinking continued to be influential, and they reproduce a famous remark by Charles Darwin, that:

*Linnaeus and Cuvier have been my two gods, though in very different ways, but they were mere school-boys to old Aristotle.* (p.6).

Reviewing the two sets of four influences, H&H find the comparison of Efficient cause with mechanism straightforward, while Final cause is loaded with the taboo of teleology. But Aristotle's teleology they say (p.7), was a local and observable affair, not a top-down imperative of divine purpose.

Aristotle's notion of Form was always an embodied form, only to be abstracted from observations, never separable from the material existence. And while he had no notion of evolution, nevertheless formal cause involves the general characteristics of a species and the features that are recognisably stable through successive generations of parents and children.

H&H go on to discuss the Material Cause described by Aristotle in his writings on the *Generation of Animals*, and *History of Animals*, which involve the specific physiological processes of reproduction and development, taking into account environment, habitat, seasons (p.8-9). While noting that Tinbergen focused on the individual animal, his concept has been broadened by later workers to include environmental influences on learning, bringing his concept closer to Aristotle's which referred to the material that an individual was composed of. Barrett *et al* (2013) offers a reminder of the importance of Tinbergen's work on the 50<sup>th</sup> anniversary of its publication.

And H&H (p.10) conclude that:

*despite all the paradigm shifts and broadening of our knowledge of the natural world over the centuries, Aristotle's general framework for the study of natural phenomena is still a viable heuristic concept. From a historical perspective, we think of Aristotle as the one who, for the "first time, marked out the field naturalists still play on".*

## Astrology

As far as we know, Aristotle never wrote directly about astrology or the interpretation of charts, but his philosophy influenced astrologers down to the mediaeval period. Despite this, it is very hard to find any trace of the Four Causes in astrological writing. Hand (2006) discusses the four causes in relation to astrological charts, and concludes that:

*A planet and the sign that it is in, in whatever house they may be in, are the matter or the material cause of the house. They represent what the house has to work with. The ruler is the formal cause of the house, as well as the final cause and the efficient cause.*

He also combines the formal, final and efficient causes as belonging to soul as in Aristotle's vitalist philosophy, in opposition to the material cause, which represents everything that an entity is made of, in a general sense that goes beyond matter. Thus: *'the matter of an expressed idea consists of the principles on which it is based, or the language in which it has been stated.'*

Aristotle elsewhere noted cases where the Final, Formal and Efficient causes were combined into one (Cohen, 2006).

So, despite their central explanatory role in analysing a wide range of human situations, and understanding animal behaviour, this partial and rather speculative relic is all that Hand can manage to pull out of the extant writings about the structure of an astrological chart.

The meanings attributed to the planets, signs and houses in astrology are well-known to have been extremely stable over two millennia, so it is odd that such a simple organizing framework as Aristotle's Causes seems to be absent from the interpretative methodology.

The Four Causes are a holistic way of analysing complex situations and the life of individuals and groups. And the astrological chart engages with similar subjects, through the houses of a chart, which only arise once a pattern of planets has been located in reference to a place and a moment in time. So, it seems that Aristotle's Causes should be recognizable, as Hand's approach shows, only in relation to the Houses, rather than the zodiac. The astrological chart is essentially a map of the world in which a person, a group or an event is situated, and since it is the human mind which is doing the analysis, it would not be surprising if the structures that form the chart keep recurring in many other schemes for capturing worlds, as Lévi-Strauss argued against the astrologers (Douglas, 2015).

At the risk of showing my ignorance I will now suggest that the Four Causes, with the help of Tinbergen's Four Whys can plausibly be identified with the angular houses in an astrological chart – I will avoid the question of whether these should be re-aligned to match the Gauquelin key sectors – what I want to focus on is the issues that are traditionally said to be represented by the angular houses.

Following the same order as above, I suggest the following:

The Ascendant/1st House – Efficient cause/Mechanism – how the person acts to engage with their environment.

The Descendent/7<sup>th</sup> House – Final Cause/Function – how the person adapts to their environment and relates to friends and enemies.

The Midheaven/10<sup>th</sup> House – Formal Cause/Phylogeny – how the person incorporates themselves into a social structure such as a profession.

The IC/4<sup>th</sup> House – Material Cause/Ontogeny – how the person developed including family upbringing and home.

Not surprisingly the symbolism of the houses used in an individual chart is more parochial than the grander vision of Tinbergen, but the correlations – or perhaps analogies – seem convincing individually as well as structurally coherent. And it is clear that these correspondences to Aristotle's Causes – except perhaps for Ascendant/Mechanism - would not have become apparent without the reference to Tinbergen. So here is one example of the way that modern research can contribute to the understanding of ancient archetypes, as more than just historical relics

If there is a valid correspondence between Tinbergen's 4 Whys and the astrological houses in the way suggested, then an obvious question arises from the circular structure of the astrological chart: are the causes also related in the form of a cyclic progression? The answer may be a question of perspective.

The astrological chart is a synchronic map showing both the enduring structure of a personality or a situation through its various Houses, and at the same time a moment in time of many different cycles. But its structure is cyclic: every time the earth rotates each planet moves through the 12 Houses in the same sequence. As a result, the static circle of the solar day that is caught at the moment for which the chart is constructed, assumes the character of a cycle itself. The Angles constantly host different planets and zodiac signs, but they always point to the Rising, Culminating, Setting and Lower Culmination directions at that location.

We have just seen how an ancient model, the Four Causes, retains validity today, and is also recognizable in the traditional symbolism of the angles of an astrological chart, even though it was not explicitly connected with them by Aristotle, as far as we know. So, it is reasonable to inquire whether other modern analytical systems, especially those composed of four categories, can illuminate the picture of astrology.

If these models and systems are truly reflections of human perception and consciousness, then they would be expected to persist over time – granted some cultural variation. So, while we don't have access to Aristotle's lost works, modern humanities and social sciences which have accumulated a vast amount of research over the last two centuries, might be able to fill in the gaps.

I would like to suggest that the analytical perspective of the astrological Houses is similar to the functionalist analyses of social environments in anthropology. With this more specific hypothesis it will be easier to explore the meanings of astrological symbols as general tools of analysis, although this task will not be completed in the present article.

## Grid-Group typologies

Durkheim was the first to suggest that cognitive categories and cosmologies tend to be determined by social environment. His approach was developed with the benefit of later ethnography by Mary Douglas (1973, 1978), under the name of Grid-Group Theory.

For the present purpose, it suffices to list the typical characters of the four Grid-Group environments, and I will do so in the same order which I believe the reader can recognize as corresponding with the sets of four described above. In each case I have also added the terms that Mary Douglas introduced to describe them in later publications (Douglas, M (2006); 6, Perri (2014)).

In the Small Group environment (High Group, Low Grid) where people live in close face-to-face contact, but in the absence of a structure of roles, the world and nature as well as the human body tend to be divided into a good interior contrasted by a bad or evil exterior which must be constantly defended against. The great danger comes from witches – evil beings which penetrate and contaminate the social body. So, it is clear that non-quantified questions of similarity and difference are constitutive of this cosmology. As Douglas points out, this type of environment is also the one into which children are born in families (Douglas 1970: 85-86, 112). And as we have already seen, this relates especially to Tinbergen's ontogenetic *Why* and to the attributes of the astrological 4<sup>th</sup> House. Douglas (2006) describes this as the Egalitarian social environment.

The environment that Mary Douglas describes as low on both the grid and group dimensions, is characterized by its attributive hierarchy, where the world is viewed as a network of *impersonal* forces, in contrast to the personal forces of witchcraft. Status goes to the 'Big Men', who are the most successful technicians, those whose magic or manipulative political power is the greatest. An interesting example being the use of Feng-Shui astrology in China. Force can only arise when there is inequality, and as in Tinbergen's second *Why*, questions of energy and action are central. In astrology, the 1<sup>st</sup> House is the point of assertion of the individual in the world. Mary Douglas (2006) has changed the name of the cosmology associated with this quadrant, and now describes it as Individualist.

When both Grid and Group are strong, the social environment again involves close interpersonal contact, but this time there is a strong grid of ascribed roles. Personal feelings are not considered to be important, as long as personal behaviour conforms to the role the person has assumed due to their position in society. Innovation is resisted, what matters is that routines and rituals are observed. In the case of calamity, the explanation is a fault of the whole society not a witch or a scapegoat, and the solution is prayer and sacrifice. This is clearly a tightly integrated social environment, and Douglas actually refers to its 'synecdochal' character (1978: 23), a theme I will return to in Part 2. As a society in which role structures dominate individual personalities, we can see a connection to Tinbergen's Phylogenetic *Why* – this is about people accepting their typical roles in the human species – but in this case socially not biologically determined. We may note in passing that this environment seems to be the one where Durkheim and Mauss's analysis in *Primitive Classification* has most purchase. Both Fiske's and Mary Douglas's theories are more wide-ranging. Mary Douglas has used the adjectives 'hierarchical' and 'positional' to describe this cosmology. Modern astrological interpretations tend to focus on the individual, but still we can see that the 10<sup>th</sup> House is concerned with the insertion of the individual into a social

environment connected with career and status, which necessarily involves compromise with larger powers and institutions.

Finally, there is the combination of high Grid with low Group, and Douglas describes this as a situation in which the majority of people – often those dominated by the Big Men – have few options to improve their situation, other than adapting to changing circumstances, taking opportunities when they arrive – a cool pragmatism, adaptive in the sense of Tinbergen. The flux of events and political change is hard to influence for people in this situation. In Mary Douglas's revised description (2006) this is now referred to as having a 'Fatalist' worldview where people are essentially isolated.

The astrological 7<sup>th</sup> House is not fatalist in outlook, but it is concerned with balancing different interests – borrowing the symbolism of the Libra zodiac sign – and with partnerships that are not to do with career and status.

The question that comes into focus now is: "does Grid-Group theory have anything to offer to the present discussion of Aristotle, Tinbergen and the astrological Houses?"

We must recognize that although the four types of social environments seem to be social analogues of Tinbergen's Whys in ethology, Grid-Group Theory has no mention of an evolutionary progression between the four types, nor any suggestion that they are linked in a cycle. And they are not construed as four subsystems within an organismic whole, which Tinbergen's questions imply to some extent.

As noted above, personality psychologists – and astrologers – have connected their own typologies with those of the Four Elements and the later Theory of Humours (Jung 1921, Eysenck 1952, Greene 1978, Vilhena 2014: Ch. 1.), which lead naturally to the zodiac signs rather than to the Houses. It is also worth noting that the Elements seem to be logically contained within just two of Aristotle's Causes: Material Causes cover Earth, Water and Air, while Fire seems to be an example of an Efficient Cause.

And the Grid-Group environments seem to have characteristics typical of the Elements as well as the Causes, so in that respect the analogy proposed here lacks definition.

As an illustration, the Small Group environment of simple unstructured closeness offers an appropriate context for the emotions and the Feeling function which Jung, and astrologers following him, have attributed to the element Water. Fire goes with assertive, combative and risk-taking personalities of the sort who do well in the Low Grid - Low Group environment, while the patience, conservatism and methodical attention to detail typical of Earthy personalities is very adapted to the High Group – High Grid environment. Finally, Airy types are those who enjoy wide-ranging social contacts, balancing conflicting interests and all types of communication – just the traits that help to navigate in a High Grid – Low Group environment.

The four types of social environment situated in relation to two axes suggests comparison to the Four Elements, but it should be noted that the correspondences we have just noted are not accompanied by the same relations of opposition as the Elements. Thus, the traditional elements are contrasted in terms of their Qualities of Hot/Cold and Dry/Moist which places Fire and Water, and Earth and Air in diagonally opposed positions, respectively. In Grid-Group theory by contrast, the corresponding quadrants identified by analogy with the properties of the elements place the Fire/Earth and Air/Water pairs in diagonally opposed



positions. The resolution of this problem, which also exists within the structure of the zodiac signs, may require a third dimension, but that is beyond the scope of the present paper.

In recent years Grid-Group Theory has been side-lined in anthropology, and according to Perri 6 (2014: 292-294), this is because Mary Douglas's hypothesis-driven and wide-ranging interest in social structure has fallen out of fashion, in favour of more inductive approaches. In contrast, her work has been found useful in the fields of Management Theory and Administration, where her focus on social environments has shifted to the various cultural biases that tend to accompany different institutional structures. It is interesting that these fields have also developed an interest in modern rhetorical theory, and especially the so-called Master Tropes, which we will meet in Part 2.

I now want to briefly describe Fiske's Relational Models Theory, which does have the evolutionary characteristics that Grid-Group Theory lacks. And the abstract formulation in Fiske's theory provides, perhaps surprisingly, the link – via the theory of tropes – to other sets of fourfolds in the humanities.

After discussing Fiske's work, in keeping with the general principle that astrology exists in an area overlapping the sciences and the humanities, I want to consider another theory in which *quaternios* have pride of place, which were described in Hayden White's book, *Metahistory*.

### **The Structures of Social Life – Causes or Elements?**

Alan Fiske (1993) has proposed that human social relations can be categorised into four types, in what he calls Relational Models Theory. These types of relations are based on the logical structures of the four scientific scales of measurement, discussed by Stevens (1946), but described in more rigorous mathematical terms by Fiske (1993: Ch. 8).

Fiske and his co-workers have tested the validity of the four models on a wide range of data from many countries and cultures, and they have reached the conclusion that they are truly universal structures which reflect human cognition. It is important to point out however that they are not simply a grid that can be applied in the same way in all cultures – their implementation employs the cultural materials that are available, but the logical structure is conserved.

They form a series of increasing complexity, and each stage includes the earlier ones, which do not become redundant, but remain to be accessed preferentially in certain social contexts. Since each new stage introduces a new level of order, the higher stages cannot be reduced to the earlier ones, they co-exist. Finally, Fiske has argued that there are only four such stages, no more, and not an arbitrary number (Fiske 1993: Postscript).

It is easier to use Stevens's terminology for measurement scales than that of mathematical structures - but the latter will be mentioned for the sake of completeness - as follows in increasing order of complexity:

The Nominal scale is one which simply gives labels to its categories and is based on the relation of similarity and difference.

An Ordinal scale recognises the relationship of 'greater than' without being able to attach a numerical magnitude either to the points on the scale, or to the differences between them.

Next comes the Interval scale, in which the differences between points are now quantified to the extent that they are all equal in magnitude. It is now possible to use the arithmetic operations of addition and subtraction: to recognise that adding three units and subtracting two is equivalent to just adding one, for example.

Finally, the Ratio scale has a zero point, and operations of multiplication and division become possible. The latter two can be compared to temperature scales. While there are a variety of interval scales such as Centigrade and Fahrenheit, the Absolute or Kelvin scale is the only one with a real zero and is a Ratio scale.

Fiske pointed out that there may be many structures of each type operating in different fields, even for the same actors.

Fiske's theory associates each of these structures with a different type of social relation.

Following the same order again, the first type of social relation is given the name of Communal Sharing (CS), typical of people in families or other close relationships. Thus, what matters is that for people belonging to such a group, there is no ranking and no accounting of debts and dues – property and goods are freely available to all members. Justice is distributive, and members of other groups are viewed as 'other'. Mathematically this type of relation is marked by reflexivity, transitivity and symmetry. Any individual may be a member of different CS groups based on different issues. The similarities with the Small Group environment in Grid-Group Theory seem quite clear, and of course the association with families relates to Tinbergen's ontological Why.

When a hierarchy is recognised that gives more rights to higher-ranked members, as typically happens in military organizations, and between generations, an ordinal scale is being employed. Fiske calls this Authority Ranking (AR), and it may include not only rank preference but protection of lower ranks by those above them. Spatial metaphors are widely used, including not just the obvious one of higher/lower, but also ahead/behind, and granting bigger personal spaces to higher ranks. Mathematically it is reflexive, transitive but *anti*-symmetric, and linear, there cannot be more than one person of a given rank. But again, there may be many different rankings in the same environment, and individuals may belong to more than one of them. This type of structuring has obvious similarities with Mary Douglas's Low Group, Low Grid environment. Fiske sees a connection between high Grid and his AR type, but that seems to limit authority to a system of rigid structures, whereas Douglas's approach acknowledges that authority can arise in a fluid environment of power struggles. The issue here may be resolved through the addition of a third dimension to Grid-Group Theory, which Thompson (1982) has dubbed 'Manipulation', but there is no need to discuss this in detail here, because it is the abstract structures that Fiske proposes which are the link to humanistic studies as we shall see in the next section.

In Equality Matching (EM), accounting of benefits and sacrifices becomes possible, in the way described above for the interval scale, such as may be used to balance the amount of work contributed to a project, or the favours received and owed. Mathematically this is the Ordered Abelian Group structure: as well as the properties of the previous structure, it now includes the associative and commutative laws. This means that in accounting credits and debts, neither the order in which they are accumulated nor how they may be bundled together matters. This type of relation operates wherever keeping a balanced score is required, examples are turn-taking and equal team sizes in sports, while in organized communal work it is important that there are no free-riders, and that accumulated debts of

time or effort are counted so that they can be repaid. The public nature of this highly structured environment, which dominates personal issues recalls the High Group-High Grid environment, as does its naturally conservative tendency (see Fiske and Tetlock, 1996).

Finally, there is what Fiske calls Market Pricing (MP), in which all kinds of exchange can be quantified, even between different commodities, and a basket of different goods can be accounted using quantities and prices for each.

Mathematically this structure is an Archimedean Ordered Field, but in common terms, it allows multiplication and division, and works like prices (Fiske 1992: 690 – 692).

This may be the case that is most difficult to connect with a Grid-Group environment, except by elimination, and Fiske sees a closer relationship between MP and Douglas's Low Grid-Low Group environment, apparently by picking up on the aspect of freedom to transact between individuals (Fiske 1993: 38). The High Grid – Low Group environment, however, focuses on the existence of a structure of impersonal rules imposed by powerful groups, which mean that adaptation is the best strategy for these rather atomised individuals. Once again it may be that the third dimension of Manipulation – which takes a low value here -is what is required to resolve the mismatch. The existence of a market and its prices does not imply that those who transact have much bargaining power, or are able to determine the prices through their personal power.

Fiske's work makes a very radical claim about the simple cognitive structures of how people form and validate relationships, but he also emphasizes that they are independent factors which don't map onto a simple 2 x 2 space (Fiske 1993: 412). This makes it difficult to propose a correspondence with the four causes, or elements, but Fiske does acknowledge a degree of similarity with Grid-Group Theory, which has this type of structure (Fiske 1993: 37-38).

While Fiske's mathematical structures cannot be condensed into a 2 x 2 map, they do tend to be correlated with certain types of social environments, and there seems to be no *a priori* reason that these *environments* cannot be mapped on two dimensions based on their characteristics, without trying to do the same with the logical structures which seem most associated with them. The two analyses are at different levels, but it seems plausible that the four mathematical relations can still inhabit certain social environments preferentially.

Durkheim's perspective was reversed by Lévi-Strauss, who asserted that social categories (and astrology) are reflections of human cognitive structures. For example, totemism creates social categories from animal classifications, simply because the latter offer structures that are 'good to think with' (SA Vol. 1 p.12): by associating two tribes with two species the difference between the tribes is asserted clearly. Animals self-evidently have species, while humans have individuality, while belonging to a single species, so that bringing the two fields into correspondence creates the social difference which is not observable in human physical characteristics.

Perhaps the apparent conflict between the approaches of Durkheim and Lévi-Strauss is also resolved through Fiske's work. While Fiske identifies universal cognitive structures more generally than those associated in primitive classification and totemism, the fact that each of his four types tends to be more associated with particular social environments – although not determined by or determining of them – seems to allow an integration of the two approaches. But in any case, it seems clear that there is a correlation between cognitive

patterns and social structures, regardless of the direction of influence that different theories propose.

It is worth briefly looking at the work of Talcott Parsons at this point – probably the ultimate functionalist who constructed a theory in elaborate detail to approach social systems at several different levels. The loss of interest in ‘grand theories’ among contemporary sociologists and anthropologists is another reason why Parsons’ work was for many years ignored. Fiske acknowledges an indirect influence of Parsons on his own work (1993: 416), as well as on most of the other theorists that Fiske himself considered to have been in at least partial agreement with the patterns in Relational Models Theory. However, he states that he could see no clear connection between his own set of four models and Parsons’ set of four System Functions (Fiske, 1993: 412), so it is interesting to consider them in the light of the discussion above.

Parsons’ system is a set of four necessary functions often abbreviated to AGIL (Parsons 1961: 412 – 418). From the discussion so far, there seem to be clear resemblances to the various sets of four.

**Adaptation** means adaptation of the system to its surroundings, which are other social systems, and Parsons views this as being achieved through the medium of money and the activities of the markets. Adaptation is just that in Tinbergen’s scheme and Parsons’ analysis links it to markets so we have a connection with Fiske’s MP model.

**Goal Attainment** is the need to solve specific problems by mobilizing specific resources equipped to deal with them – in other words we are looking at action and change. Goal Attainment is clearly a question of mobilizing energy to get things done linking it to Tinbergen’s Mechanism, which we can expect involves hierarchical relations of command in the interests of efficiency and amplification of efforts, so AR is the connection to Fiske.

**Integration** is the requirement for a social system to ensure cooperation among all its subsystems to achieve stability. Integration is the function that conserves proper relations between the parts of a system, and since internal structure is what gives a system its identity, it seems quite consistent to link this to Tinbergen’s Phylogenetic function and Aristotle’s Formal Cause. Fiske’s Equality Matching (EM) is also what ensures that internal tensions do not shake a social system apart.

**Latency or Pattern Maintenance** – is essential for holding social systems together through institutions which ensure moral coherence, and values which Parsons says must be internalized in the general population. He thus identifies the family, religion and schools as the key influences. Finally, we have the typical unstructured and nurturing environment described in Tinbergen’s Ontogenetic function, Fiske’s Communal Sharing (CS), and Mary Douglas’s Small Group environment.

## Designing a village

As a way of illustrating that these fourfold patterns do not depend on sociological analysis, I would like to present yet another four – fold scheme which was developed in a completely different context from the wide-ranging analyses discussed above. Nevertheless, it produces striking similarities to those above, and adds conviction to the thesis being advanced here, simply because it arises from an analysis that had no grand pretensions to analyse social systems. And at least three of the social functions familiar in the astrological Houses seem to emerge quite naturally.

Astrology is often characterized – at least by some of its practitioners – as a blend of art and science, so if we think of other disciplines with this characteristic, one is surely architecture. And it offers an interesting comparison, because designing a living space is a complex undertaking involving many goals, and also because an astrological chart is a structure of a small world (the person or the situation) reflected in a macrocosm – it even contains houses.

In many traditional societies both houses and villages have spatial symbolism, they are often oriented according to the cardinal directions (Bourdieu, Needham, etc.)

The architect Christopher Alexander approached design in a bottom-up way, rejecting the imposition of pre-packaged beliefs about necessary functions in favour of making a list of micro-level requirements, together with a number representing the existence of positive (+1) or negative (-1), or null (0) links between each requirement and every other one. A computer algorithm was then set in motion to find a way of segmenting the resulting web of links in such a way that the requirements that were most closely linked would form the major branches away from other groups that were weakly linked. Alexander does this so that an organic structure is created that allows parts to be modified as required without everything having to change.

As a demonstration he used this method in the design of an Indian village. 148 individual small-scale requirements were collected by talking to villagers from the area, and a table of their inter-connections created. When the program was run it produced a tree structure with four major branches, which I will now describe, using Alexander's descriptions.

1. The sentimental system, involving shelter, hygiene, caste and sex separation. Drinking water, washing, and protection against rain and floods. Space for meal preparation, where the extended family live together, without over-crowding. It allows room for cottage industries, religious requirements, and has separate spaces for men and women to socialize, and children to play.
2. Efficiency, marketing and storage of raw materials and fodder, security at entrances, and access for bullock carts.
3. Cooperative production process, distribution of water across fields, crop protection and tool replacement, labour management so that workers are available when required, management of land and owners' boundaries. Collection and conservation of water, land reclamation and prevention of soil erosion.
4. Social events, marriage, mobility of labour, development of other industries, and diversification of work. Efficient provision of light and energy. Access to trains and

buses, use of bikes to go to school. Post-natal care incentives and aspirations. Festivals and processions, youth literacy, sale of goods, information on public health, taxes, elections. Local radio. Management of social disputes.

I have listed the four groups in the order that seems to follow the sequence described above for the Four Causes and in Table 1. below.

So, to summarize, we see that the first group are exclusively domestic and aimed at protecting and nurturing the family. The next seems to be a simple technical service function, while number three is devoted to collective industry management in a public not domestic setting. The last is devoted to communication, social events and education.

I hope that the reader can see the similarities with the previous sets of four.

Alexander's model seems to come from a strictly Functionalist perspective, where the relations between a set of practical micro-requirements are what creates the tree structure that most efficiently divides into these four main branches. Alexander makes the point that a modular structure is the best compromise between integration and adaptability to change.

Mary Douglas worked in the Durkheimian tradition, which was one of the central threads of functionalism. As Giddens has pointed out (1984), functionalism looked to biology as the physical science capable of providing the closest model of societies. This immediately suggests a connection to both Aristotle and Tinbergen.

So, we also see that as a fourfold model it arises within the context of just one of the overarching paradigms we have been looking at: in other words we are dealing with cycles within cycles, something which is fundamental to the astrological worldview and to the structure of an astrological chart. And Parsons made this continuing subdivision of functions within functions into sets of four into a key feature of his theory.

## **PART 2. Fourfold Structures in the humanities – World Hypotheses and Tropes.**

Hayden White's remarkable book, *Metahistory* (1973) proposed an analysis of 19<sup>th</sup> century historiography at several levels, including Tropes, Emplotment, Argument and Ideology, each of which contained four terms in correspondence.

There is no need to delve into the writings of the various historians discussed in detail by White to appreciate that his scheme proposes a radical analysis of activities which extend well beyond the writing of history. And specifically there is another reason for considering White's work, which is that the most basic of *quaternios*, the tropes, according to Kellner (1981), does have the structure of a sequence which forms a 4 – step cycle, starting with Metaphor and ending in Irony before returning to form a new cycle or – if combined with a linear development - another turn on a spiral. This in turn implies that the other members of White's shown as columns in Table 1, should also be considered as a progression.

Because White’s synthesis is so eclectic - and to avoid trying the reader’s patience - I suggest that it is useful to think in terms of *families* of theories (Lerner, 2003: 69), based on Wittgenstein’s concept of *family resemblance*. The fuzzy edges of this classification also seem closer to the way astrological interpretations are generated. Rather than a system of sharp categorical boundaries, astrological interpretation is produced in a participant observer relationship between astrologer and client. Understanding another person’s lived experience is the basis, rather than a purist search for conceptual boundaries.

But this fuzzy negotiation between person and worlds, is not without structures and boundaries, and it is here that we can seek to make sense of divinatory astrology, where the structuring of the human mind weighs more heavily than the structures and dynamics of the physical world.

The various levels identified by White, and shown in Table 1, are drawn from a number of different authors: Tropes from Vico’s *The New Science* (1744), Emplotment from Frye’s *Anatomy of Criticism* (1957), Argument from Pepper’s book *World Hypotheses* (1970), and Ideology from Mannheim (1946, and see White (1978: 22-29). I will focus mainly on the tropes, and on Pepper’s World Hypotheses, with some mention of the political ideologies.

In another work White also drew attention to the correspondences between the four master tropes and the four epistemes, which Foucault identified in his book, *The Order of Things* (1966), see also White (1973b).

Trope	Emplotment	Argument	Ideology
Metaphor	Romance	Formist	Anarchism
Metonymy	Tragedy	Mechanist	Radicalism
Synecdoche	Comedy	Organicist	Conservatism
Irony	Satire	Contextualist	Liberalism

**Table 1. Showing White’s four levels.**

In Hans Kellner’s article *The Inflatable Trope* (1981), he considers White’s system in detail, noting that White’s comparison of the sequence of four tropes also mark a developmental series. As he says:

*One of the most striking and least examined aspects of the four-trope series - the "master tropes" of Vico and Kenneth Burke - is their inherent movement through a fixed course: from metaphor, the preliminary naming operation, to metonymy, the process of reductive manipulation and formalization, to the integrative, macrocosm/ microcosm relationships of synecdoche, to the final awareness that within the series all of its processes have been relativizing turns, the whole process ironic. On this view, the tropes become "moments" of the tropology itself, which is not seen so much as a set of forms or categories, as a system, indeed the system, by which mind comes to grasp the world conceptually in language. The order in which the tropes present themselves in this system is strictly and logically entailed. (Kellner, 16-17).*

And the sequence is also a cycle:

*This poetic logic... prescribes a pattern of recurrences directed in their courses and recourses by an analogy to the linguistic movement from metaphor, through metonymy and synecdoche, to irony and a re-beginning. (Kellner, p.19).*

The tropes are the most basic level in White's comparison, and I believe we can see immediate signs of correspondence with the scales that Stevens identified and Fiske's Relational Models: plausible enough to warrant further study.

## **Tropes and Scales**

Metaphor – Nominal scale – both based on the concept of similarity without quantification.

Metonymy – Ordinal scale – based on the relation of greater than, which implies force and causality in the scientific sense.

Synecdoche – Interval scale – both based on the relation of part to whole. The interval scale is made up of units which compose a whole.

Irony – Ratio scale – allows multiplication and division, and it reaches the point of abstraction from content. There will be more to say about this later, as it is the least obvious of the correspondences.

Even If we accept that there is a plausible link between the scales and the master tropes, it doesn't establish an obvious claim that the astrological structure of the Elements follows the same pattern, but by moving up the levels of White's table we approach descriptions that are more commensurate with the way the elements are recognized in astrology. And I want to focus on the level of 'argument' in White's table, employing Pepper's World Hypotheses, where I believe the connections are most relevant.



### **Stephen Pepper's World Hypotheses.**

Pepper's Hypotheses are described in his book (1970), and can be viewed as overarching schema, similar to Kuhn's concept of a paradigm. Each is associated with a 'root metaphor' which Pepper considered to encapsulate their essences, but Pepper does not suggest that they form either a cycle or a progression.

Rather than start from Pepper's book (1970), I will refer to Lerner's detailed discussion in Ch. 3 of his book (2002) - although only three of Pepper's models are considered there – because this context gives a clear indication of a progression of adequacy in the development of the Hypotheses, which is absent in Pepper's work. Lerner's discussion is in the context of developmental psychology, which makes it more relevant to the contemporary use of astrology by its practitioners.

After describing the three Hypotheses which figure in Lerner's discussion, we can consider the fourth member, Metaphor/Formism, which does appear in H&H, as described above.

### **Mechanism.**

The Mechanistic model is based on a metaphor of the machine, and in psychology it is characterized by a taste for reductionism – since all social actions depend on physiological impulses, and they in turn on physico-chemical ones, the world is divisible into one 'real' level out of which the others are elaborated. In psychology this approach eclipsed all others during the peak of the behaviourist movement in the 1950s.

In Hayden White's synthesis, Mechanism is associated with the literary mode of plotment known as Tragedy, and in politics with Radicalism. In the first the hero does not suffer an accident, but rather the consequence of heroically pursuing his beliefs or principles, in a world of corrupt little people – who we can assume are nonetheless better attuned to social customs. In politics this may also be true, with those who seek to clean up the system, and *cause* change, by manipulating or subverting what seem to be the mechanisms of power and control. The claim is that we must eliminate all the obfuscations that political players invent to mask the underlying laws of political science – Marxism claims just this.

In behaviourist psychology the stimuli and responses must be identified, and beyond them their neurochemistry to achieve a complete description. There are no emergent properties, the whole is exactly equal to the sum of its parts, once we get them joined up in the right way. A similar perspective is applied to the relation between genes and behaviour.

The trope that underlies the mechanist hypothesis is metonymy, which White (1973b: 46 – 48), identifies as the basis of Foucault's second *epistémé*, covering the 18<sup>th</sup> century approach to science.

The emphasis on technique and results is familiar from the description of the Low Grid Low Group environment, while conflict and causation seem typical of the attributes of the fiery personality, and with the Efficient Cause of Aristotle.

## Organicism

Quoting Reese and Overton (1970, p.133), Lerner (Ch.3, p.58), goes on to say that for this model, “the essence of substance is activity....and the whole constitutes the condition of meaning and existence of the parts.... The important point here is that the efficient cause is replaced by the formal cause”. Thus, reductionism is rejected because “at each higher organizational level something new comes about” (ibid, p.58), which is characterized as epigenesis, the emergence of new levels across ontogeny (ibid., p.58). which are not evident at earlier stages, where change is qualitative not just quantitative. Thus, the emergence of language in children cannot appropriately be described by continuing the stimulus-response model that worked at earlier stages.

Pepper’s Organicism Hypothesis takes the organism as its root metaphor, although Pepper cautions against thinking it is limited to biological systems. As an impressionistic analogy, Lerner contrasts the additive combination of parts in Mechanism, with the multiplicative combination in Organicism. While a car can be assembled from its parts correctly articulated, each of which can exist independently, an organism has the extra dimension of having *evolved* into complexity, and it is arguable that Evolution was the key paradigm of 19<sup>th</sup> Century science by which it moved beyond the mechanistic theories of an earlier era. As White (1973b) has argued, Foucault’s series of *epistemés* follows the same sequence as Pepper’s Hypotheses.

Humans are seen as constructors of their world, not passive responders to it, and the pivotal point is the end result, the goal of development, thus implicating teleology and the Final cause as well. Each stage represents a synthesis of the contradictions of an earlier stage (ibid., p.61), in other words progression is dialectical.

In Lerner’s discussion he is careful to point out the variety which exists among what he classifies as Organicism theories, following the nature – nurture divide. Thus, theories which pay more attention to the role of the environment in determining organismic structure side towards Mechanism. Those that focus on genetic inheritance tend to veer towards simple Organicism, but they too can have a mechanistic bent insofar as they seek one single chain of causality, whereas true Organicism allows influence to arrive from multiple sources.

We see in this discussion that Pepper’s scheme of hypotheses implies a progressive tendency, which will continue into his model of Contextualism. As a prelude, Lerner distinguishes pre-determined epigenesis from probabilistic epigenesis which has Contextualistic overtones (p.62). Curiously however, Pepper’s Formist model, and equally Aristotle’s Material Cause are not identified as distinct stages in Lerner’s discussion of development.

White’s analysis of Foucault’s third *epistémé*, points to synecdoche and organicism as the basis for the 19<sup>th</sup> century approach to science, which was intensely influenced by Darwin’s theory of evolution. Explanations move away from biological classifications in tables of difference and mechanical forces in physics, towards a holistic and two-way model of causality. There is no space to explore further here, but since the 19<sup>th</sup> Century division of labour led to mass production of identical units, each composed of the same set of parts, it would seem that Foucault’s *epistemés* might also be found in industrial development. And extending the analogy, the previous period in Foucault’s system linked to Mechanism by White (1973b) seems to have an interesting relationship to slavery, which was so characteristic of that period. A machine is essentially an energy producer that can be

controlled by a master, and this is what millions of human energy producers were reduced to.

The Organicist metaphor seems particularly apposite for Tinbergen's Phylogenetic Why, where the complete organism has matured and functions in the way determined by its Formal Cause. And in the High Grid – High Group social environment we are reminded of the triumph of social structure over the individual, where each person is entitled to an equal share to those at the same level of the positional hierarchy (similar to EM), and the cardinal virtue is piety (M. Douglas, 1973, p. 87). And Mary Douglas explicitly describes this environment as synecdochal (1978, p. 23). To an astrologer an Earthy type of personality is characterized by patience, methodicalness and attention to detail.

Politically the ideology is Conservatism.

### **Contextualism**

In his discussion of the previous two world hypotheses, Lerner advocated a softer more probabilistic type of Organicism, but even then, one problem remained – the absence of an active role for time during development.

Pepper's root metaphor in this case is 'the historic event' ... "when it is going on in the now, the dynamic, dramatic, active event" (Pepper, cited in Lerner, p.71). Continuing Lerner's summary, the Contextualist Hypothesis assumes as axiomatic that change is constant at all levels of analysis, and that all levels are embedded one in another. Thus, change does not need to be explained, rather the task of the scientist is to 'describe, explain and optimize the parameters of *processes*... reflecting relations among the various levels' (Lerner's italics, p.72).

In contrast to Organicism, the organism is seen as changing in its environment by transacting with it, and there is no implied future goal which the system must be heading for.

Interestingly, Lerner mentions that the multiple causative influences in play include formal, efficient and material, but not final causes (p.72).

Another contrast with Organicism is that the integrative imperative has been reversed into a dispersive one, so that future states cannot be predicted on the basis of purposes or norms. While doing this makes for obvious difficulties for a model of development, Lerner believes that a probabilistic version of the previous Organicist model can make up the deficiency. The exclusion of final causes in what Lerner calls 'pure' contextualism, leads to limitless unpredictable plasticity. However, in the context of our discussion of Tinbergen's Whys, this responsiveness to context is exactly the functional answer, the adaptation of the organism to its context or habitat. But it needs to be a process in 'dialogue' with the organism's own nature or Formal Cause. Thus, what has changed is the Organicist assumption that the structural maturation of the organism determines its function in a uni-directional manner, has changed to admit bi-directional influences (p.73 - 74). The dialectical character is implied when we think about the variations that exist in the environment in the form of diurnal and seasonal cycles, and the inborn genetic factors are also of course subject to variation – we are not all typical human clones.

The organism does not merely interact with its environment through a bundle of stimulus-response links, as a Mechanist approach would have it, but it, as a whole, contributes to shaping its environment (p.76).

The final one of Foucault's *epistémés*, covers the period beginning in the 20<sup>th</sup> century including the present, according to White (1973b: 48) is governed by a contextualistic approach based on the trope of Irony. The characteristically 20<sup>th</sup> century approaches, which White and Foucault refer to are psychoanalysis, linguistics, phenomenology and structuralism.

White also draws on Kenneth Burke's revision of rhetorical theory, in the tradition of Vico, in which he identifies Irony as the trope of dialectic (Burke, 1969: 511 – 517). At this stage the teleological view of development as pre-determined towards a certain goal is replaced by a multi-perspectival view. Complex situations are seen from the multiple perspectives of different players in a human drama, and it is recognized that following a rise, comes a decay. Thus, time is given a new interpretation, in line with the discussion above of developmental psychology. The trope of Irony is self-reflective, and thus represents a jump to a new level.

All this seems quite consistent with the Final Cause, which in Tinbergen's system corresponds with the need to adapt to the circumstances of habitat. In a Low Group – High Grid environment, the rules cannot be negotiated, but they can be navigated, and the best way to do this is to be open to all kinds of communication, to news about changing circumstances and to talk to as many people as possible – all typical traits of a so-called Airy personality.

Liberalism is the political belief that White assigns here.

### **Formism - the missing member**

It is interesting that Tinbergen's system of four Whys was derived from an earlier one by Julian Huxley, which only considered three factors, and these three were the same that show up in the correspondences just considered.

Tinbergen's innovation was to add the Ontogenetic question to the system in addition to Huxley's Phylogenetic factor, and since this includes the early stages of development and the environment in which they occur, it can be plausibly placed at the beginning of the 4 – stage cycle, in correspondence with Metaphor and Pepper's Formism, which I will now summarize from the description in his book (Pepper, 1970).

The basic root metaphor of Formism is similarity – which of course immediately suggests that the correspondence that White has suggested to the scheme of tropes is connected at the right place in the cycle.

According to White (1973b: 46 – 47), the principle of similarity and the underlying trope of metaphor were what governed investigation of the world prior to the 17<sup>th</sup> century scientific revolution – this is Foucault's 16<sup>th</sup> century *epistémés*. The concept of similarity varies depending on the field of data, and it is important to note that in biology it employs the concept of a norm. Thus, while oak trees are not identical in size, shape etc depending on their environment, they are still recognisably oak trees (Pepper 1970: 163).

In another essay, White (1978: 1 – 25) identifies the progression of stages governed by tropes in the work of Piaget on child thinking (sensorimotor, representational, operational, logical), Freud's on the dream work (Condensation, displacement, representation, secondary revision), and Marx on the evolution of forms of value (simple, extended, generalized, absurd the money form). In each case he considers the possibility that each of these writers may simply have imposed, rather than discovered their four stages, but concludes that this does not matter, because the mere existence of analogies between such different works is a validation. And, in the end, the four stages governed by tropes are developmental stages of consciousness, even if they are not empirically present in these different subject matters.

Pepper pointed to a four-quadrant map in which his Hypotheses were organised. Thus, Mechanism and Organicism were described as integrative in contrast to the dispersive nature of the other two, and Mechanism and Formism were characterized as analytical hypotheses in contrast to the other pair as synthetic.

Elaborating on this, Mechanism and Organicism tend to connect their data into structures, while Formism and Contextualism are happy to collect observations and leave them as they are. The facts addressed by Mechanism and Formism tend to be elements or factors, whereas those of interest to the other two theories tend towards complexes or contexts.

It is interesting to note that both the sequence of four tropes and Foucault's *epistemés* have recently been taken up by management theorists, to analyse the development of institutions and organizational sense-making (Green, Mitroff and Alpasian, 2010; O'Leary and Chia, 2007). Going further Li (2017) has attempted to use semiotic theory to study institutionalization, although her work is limited by its incomplete application of Peirce's semiotics. This will be the subject of another article.

### **Conclusions and back to astrology**

I hope that this review of four-fold classifications and structures provides a plausible argument that the common human cognitive structures of the type that Fiske has proposed, can also be identified in the humanities. While scales are the basis in the sciences, tropes offer an analogous structure in the humanities. In another article I will develop the connection to semiotics, which is arguably the arena where a new synthesis of sciences and humanities is already emerging (Hoffmeyer, 1997; Ivanov, 1978; Kalevi, 2008; Heiskala, 2014). And it confirms the view of Lévi-Strauss that the key structure is cognitive.

We seem to have travelled a long way from the angular houses of an astrological chart, but I have tried to point out the similarities of themes in the work of Fiske, and in Grid Group Theory.

As mentioned, most astrological interpretation is concerned with rather parochial and personal issues brought by clients to an astrologer, while the analyses discussed arose from much larger cultural and sociological fields of interest. Nevertheless, an analogy between microcosm and macrocosm, is one of the central dogmas of astrology.

Astrology is also couched in a human-scale language of signs and images, rather than analytical concepts (Vilhena 2014: 28-30, 183). Its abstract structures appear only as the four Elements, and three Modalities, and of course in the cycle motif which pervades the

whole of astrology (Vilhena 2014: 25 – 51). The abstract structures that Fiske employs, and the bare bones offered by the tropes would seem a long way from astrology, were it not for the fact that each of them underpins levels that are much more recognizable in human terms.

The new addition to the picture of a fourfold cycle, which has come from the scholarship and investigations since the 18<sup>th</sup> Century, is the introduction of the abstract levels of scales and tropes. Naturally, these would not have been expected to appear in the tradition of folk wisdom in which astrology has always been embedded, but they offer a completely new way of studying these symbolic structures now. And, as mentioned above I believe this can be done most effectively with a semiotic approach, which I will explore in another publication. It is also worth noting again that astrological symbolism contains its own grammar, which is not hard to see in the three principle categories of its symbols. Thus, while planets are the active forces which most resemble verbs, the Houses are locations containing areas of application which play the part of nouns – including a variety of cases. Finally, the signs are usually applied by astrologers as colouring the previous two categories, in other words they play the roles of adjectives and adverbs.

Another interesting conclusion, in view of the project of using modern scholarship to fill in the gaps in the writings of ancient philosophies is that both Fiske and Burke, as well as the writers on organizational theory place metaphor - and hence by correspondence, Water as the first step in a process of cyclic change. This also corresponds with the theory of Thales of Miletus, as described by Aristotle in his *Metaphysics* (983 b6, 8-11). In modern astrological practice fire is always taken as the first stage, representing birth while water is the last – although the cycle passes through the stages in the same order: Fire, Earth, Air, Water.

It is often said that Heraclitus favoured Fire as the most basic element, but this was probably only due to it being the principle of Change (Graham, D W, n.d.).

From the point of view of the practicing astrologer it makes sense to give preference to birth where the foetus emerges into the world, and this is symbolised by the Ascendant. But doing so ignores the period of gestation which takes place literally in a sac of water. At the Ascendant the crisis of birth is well symbolized by the element fire.

An astrologer may scratch their head and wonder what this offers them as an improvement in interpretation, but since we are talking about a cognitive structure the novel possibility is to use this analysis as a guide to elaboration of categories in the sciences and humanities, which can go beyond the work of the authors cited above.

It is useful to end by considering the different astrological practices which exist.

While it seems clear that astrological charts are constructed in a functionalistic way, it would be a mistake to think that this means that astrological practice is functionalistic. The way that charts are used by practitioners reveals the quite different epistemologies that can be applied to interpretation using the same system of symbols. And it is here that we find yet another level at which a fourfold pattern can be perceived.

## **Four varieties of astrological practice**

This ground has been covered before by Patrick Curry (1985), and in (Douglas G J, 1983), but is worth reviewing briefly.

Curry identifies four types of astrological practices, which he calls Hermeneutic, Scientific, Psychological, and Structuralist practices. I have listed them in the order in which I believe that they correspond to the four types already described above, with some new comments.

In each of the examples that Curry suggests, it is the use to which astrology is put that varies: the structure of a chart and the symbolism of the planets are not questioned. Nevertheless, there are some interesting variations in the way that the astrological symbols are used in the four cases.

### **Hermeneutic Astrology**

According to this type of interpretation, meanings are created intuitively or inspirationally in the moment between an astrologer and client. The scientific approach that requires results to be repeatable is regarded as heresy. There is no structured hierarchy in this small close-knit group, but there is charismatic authority. It is interesting that despite this lack of structure and denial of the existence of patterns in objective time, still the rules of interpretation are rigidly adhered to. But dissenters are simply excluded, in the way that Mary Douglas found typical of small group environments. Curiously, interpreting a chart has no purpose, other than to discover whether it is truly applicable to the moment of a question being posed. In other words, demonstrating that divination is something that the universe permits is more important than the concept of helping a client (Phillipson, 2006: 14). Curry regards this as a de-humanizing approach, because, influenced by Heidegger it regards language as speaking through the person, not the person speaking their truth. It privileges the phenomena of experience over the experience of objective phenomena. It is also elitist by being exclusive to true believers.

Finally, the Hermeneutic astrologers, do not question the Tradition – with a capital ‘T’ – of astrology, but feel themselves to be engaging in a living moment of active symbolisation when they read a chart. This is probably the most religious and magical type of astrological practice, but without a God.

The belief in this practice is that astrology is a process of divination, in which the symbols speak to those who know how to listen and can check that a chart is valid to use (Cornelius, 2003). Besides the typical symbolic associations of the Houses it is often said that the ‘Querent’ – the person asking the question – is symbolized by the sign which is rising at the moment the question is asked, while the astrologer appears in the sign opposite which is setting. It is interesting to compare this with the so-called Celtic Cross technique of divination using Tarot Cards (Widginton, 2019), where the cards are laid out in a cross framework on the spatial axes of above/below and in front/behind. What is ‘in front’ of the querent signifies the immediate future, while what is behind is the immediate past. In contrast what is below signifies the deeper roots of the situation in contrast to what is above which may relate to a longer-term future or a goal. It is not difficult to detect echoes of Tinbergen and Aristotle in these assignments.

## **Scientific Astrology**

This is also regarded by Curry as being an elitist approach, but in a different way – training and methodical procedures are required to assess data. In the demand for objectivity, the subject as the knower is left out of the picture.

Curry makes a crucial point that the existence of partial, statistically valid evidence for astrology is a source of existential anxiety for the Hermeneutic schools, because it threatens to puncture the barrier between astrology and science. The hermeneuticists can live with science quite comfortably, as long as they can believe that their domain is separate from it.

Anxiety also emerged among conventional scientists, and again because the boundary had been breached, threatening to taint their scientific purity with superstition from before the 17<sup>th</sup> Century scientific revolution. Interestingly the two groups that engaged in this defence of science were politically on opposite ends of the spectrum, While CSICOP in the US was quite far to the right, CFEPP in France were confirmed Marxists outraged at the assault on rationalism that astrological research seemed to imply.

The scientific astrologers note the lack of evidence for effects issuing from the zodiac signs, focusing instead on what amounts to just five planets and a variant of the Houses, because these were identified in the major investigation by the Gauquelins. It is also interesting that they ignore the symbolic differences that depend on where a planet is placed among the Houses, simply lumping together the ‘strong’ and the weak areas that tradition also identifies. There is no reason why the detailed symbolism could not be tested although doing so would reduce the statistical significance of any results due to the splitting of the data into smaller samples. But it does show that there is an avoidance of ‘meanings’ in favour of more easily quantifiable factors such as ‘strength’. The factors in the astrological system are to be pulled apart and tested separately for empirical validity – the search for a ‘grain of gold’ within the dross, as Michel Gauquelin called it (see Ertel, 1989), an analytic and reductive approach which is typical of Mechanist world hypotheses.

## **Psychological Astrology**

This tradition is the broadest and largest church, which defends professionalism through diplomas and supervision of astrologers. For those interested in serious astrology it is the most accessible and democratic school, with a stated aim of using astrology to help clients with their problems, often as an adjunct to counselling or psychotherapy, and is highly influenced by Jungian psychology. While focussing on the uniqueness of each individual, it still acknowledges a common humanity among all, because although the planets move, it is the same planets which are said to describe human potential in myriad combinations. There is a strong belief in ‘human potential’ which astrology can help a person to realize, while overcoming their inner conflicts through acceptance and awareness. Integration is the key, and science is accepted in the belief that eventually it will be reformed and lead to a new spiritual science that will replace the old materialistic version.

We have noted a close connection between functionalism in anthropology and models of society suggested by biology, and the astrological Houses, with their concerns based on the functions that need to be met in daily life, viewed as an organic whole. This is also the focus of Psychological astrology, on which are superimposed the colourings supposed to result from longer term planetary cycles.



## **Structuralist astrology**

The name comes from the explicit interest shown by the very small Radical Astrology Group (1983), in applying the insights of both structuralism and post-structuralism to interpreting charts and understanding the structure of astrological symbols as a system in the Saussurean sense. However, in this approach, history tends to disappear into mere change in Curry's opinion (Curry, 1983, 2015), while the human subject is lost from view, no longer constituted in historical time. More interest is focussed on the relations between symbols in a system without reference to empirical reality. This is such a small and now non-existent approach that there is little point in commenting further, except to say that it was more a cultural critique of astrology than a practice of it.

Structuralist astrologers – if they exist – are interested in how meaning is produced by astrologers using these symbols, and also in understanding the system of symbols as a code or convention. But Curry's categorisation misses the vast numbers of people who consult newspaper astrology columns, those who are generally uncritical, but hoping to find a way of making sense of a world that is beyond their personal control – their lives are determined by contexts and by historical events. This is the province of Fatalism, which is the more recent name that Mary Douglas has given to the cultural bias typical of her Low Group-High Grid quadrant (Douglas 2006), as mentioned above. And the characteristic feature of this type of astrological practice is its lack of a personal focus on the individual, which is quite consistent with the need to churn out bulk predictions in which the whole population can potentially find something. Thus, the planetary positions in the houses have to be disregarded because they require the year, time and place of birth to be known, but newspaper columns go further and mostly reduce everything to the 12 Sun Signs, which only depend on the date and month you were born.

Mary Douglas's low group-high grid environment is at the low end of the scale of social privilege (Douglas, 2006). So, it is interesting that the structuralist astrologers appear as a kind of liberal elite, eclectic in their interests, and focussing on the need to dialogue between alternatives – the same quadrant but higher up the scale culturally and probably economically.

Because astrology has proved so resilient in passing through historical and cultural changes, it is easy to assume that it is still governed solely by the principle of correspondence typified by Foucault's 16<sup>th</sup> Century episteme, ruled by metaphor. But the preceding discussion has shown that it is remarkable in that it holds within its cyclic structure all four stages of development. This is not so surprising because it has always been recognised by astrologers that there are cycles within cycles. It is a question of levels, which was also a feature of the mediaeval Great Chain of Being.

These four approaches are basically varieties of discursive practices, and they will be developed further in a Peircean semiotic framework, to show that the fundamental difference between these 'schools' of astrology and also the four World Hypotheses resides in how they choose to model signs and symbols. And this is an epistemological question that has implications far beyond the study of astrology.

Arguably, in the 21<sup>st</sup> Century we are witnessing the beginning of a re-synthesis of these two modes of inquiry which were split into the sciences and humanities, as Goethe predicted. This is taking place especially in the field of semiotics, which I will address in another publication.

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