Spontaneous Order and Unificationism

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INTRODUCTION

When we look around us, we see that we live in a world in which there is order. Naturally the question arises "why?". Why is there order and why is a pattern discernable in our surroundings and indeed within ourselves? Since when we make something to fulfil a particular purpose, we design it, and as a result it appears to have order, it is easy to conclude that the order present elsewhere is also the product of design. Thus it is assumed that there is a supernatural creator of order. For this reason all cultures have creation myths to explain the source of the undeniable order which exists all around us. In any case, it is intolerable to live the life of Sartre's Antoine Roquentin believing that everything is absurd and purely contingent. As Dostoevsky recognized, suicide is the natural step for a person who takes nihilism seriously.

However, the traditional answer to the question that all order is the result of design has culminated in determinism, reductionism and totalitarianism. Not only that, but it is in fact wrong. As we shall see there are countless examples of spontaneous order which are not the result of design.

Recently, outside the realm of economics at any rate, a new view of order has become known: self-generating order. It has even been proposed as a basis for the unity of the sciences since it has been found in physics, chemistry, biology, economics, linguistics and probably every other discipline too. It is a very recent development and has not been digested yet by philosophers still working out of the traditional view of order. Interestingly though, Soviet philosophy anticipated such a development, with the result that one often finds Marx and Engels being quoted by theorists of spontaneous order. Also, J.B.S. Haldane, Alexander Oparin and Joseph Needham, who, though highly respected as scientists, were previously not taken seriously when they speculated philosophically because of their Marxist views, are now being recognized for their foresight.

The problem is that philosophers and theologians have not been able to discuss the notion of spontaneous order because their presuppositions inherited from Greek philosophy did not enable them to. What is required is an ontology which is commensurate with spontaneous order and the results of modern scientific research.

In this thesis I will first examine the development of the treatment of order in the Greco-Roman world. I will then show what the implications of such an approach have been. This will be followed by evidence that the whole enterprise of Greek philosophy, which was the attempt to purge the world of chaos by imposing order on it, is impossible. Next I will examine the evidence for and theories of spontaneous order in the natural and social sciences. Finally I will discuss and develop a Unificationist view of order. In some ways this thesis will appear to be only a review of the literature on the subject. This is because part of the purpose of the thesis is to bring into the public domain ideas most people are unfamiliar with and to show the links between various

disciplines previously not noticed.

DEFINITION OF TERMS

The best definition of order I have come across is that of Friedrich Hayek, Nobel Laureate in Economics, who has devoted much of his life to investigating the origin and nature of social and economic order. Order is,

> . . . a state of affairs in which a multiplicity of elements of various kinds are so related to each other that we may learn from our acquaintance with some spatial or temporal part of the whole to form correct expectations concerning the rest, or at least expectations which have a good chance of proving correct.[1]

The second important definition is of spontaneous orders. They have been described by Walter Weimer as,

> . . . biological, social and (only recently studied) physical phenomena that evolve without conscious or explicit planning (or externally imposed controls) according to internal regulative principles. They are characterized by decentralised or "coalitional" control, unpredictability of particulars, and immense complexity compared to simple systems. They are understandable only in terms of what Hayek has called *explanation of principle* rather than the particular. Their principles of regulation are rules of interactive constraint rather than deterministic laws. Constrained orders are determin*ate*—regulated by abstract principles—but not determin*istic* and/or predictable. They are . . . cloud-like systems that have the power to look like clockwork mechanisms.[2]

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[1]Friedrich A. Hayek, <u>Law, Legislation and Liberty</u>, vol. 1. <u>Rules and Order</u> (London: R.K.P. 1982), 36.
[2]Walter B. Weimer, "Spontaneously Order Complex Phenomena," in <u>Centripetal Forces in the Sciences</u>, vol. 1, ed. Gerard Radnitzky (New York: Paragon House, 1987), 260.

CHAPTER 1

THE GRECO-ROMAN BACKGROUND

I. Greek Philosophy

Traditionally philosophy has been the attempt to explain the whole of existence using natural reason, and through this exert control over it. The first metaphysical problem which Greek philosophy addressed was that of permanence and change, Being and Becoming. It appears to us that everything changes, the seasons, plants, animals, and of course ourselves. But at the same time there is some sense in which everything remains the same. Beneath the apparent chaos of change, the first philosophers believed that there was an underlying unity, otherwise life would be incomprehensible and meaningless. They looked for something which would make sense, would give order to life, something that was permanent, persisting through the apparent chaos of change. The conclusions which they came to affected the development of European civilization.

The world of the Greeks was populated by many gods, whose playground was the earth and those that dwelled within it. They were capricious, continually intervening in human activities, and therefore were to be praised or blamed for what occurred. They were disunited among themselves, continually pitting their human favourites against that of another god's. Thus in <u>The Iliad</u> Agamemnon ascribes his behaviour in wronging Achilles by taking his wife to Zeus:

> Not I, not I was the cause of the act,
> but Zeus and my portion (*Moira*) and the Erinys
> Who walks in darkness;
> they it was who in the assembly put wild *ate* in my
> understanding. On that day when I arbitrarily took
> Achilles' prize from him.[1]

> *Moira*, or Fate is the inescapable and inevitable power that takes man, powerless to affect the future, towards his destiny.[2]

Much like the Chinese philosophers, their Greek counterparts tried to exclude the gods and hold man morally responsible for his own actions. Thus they postulated a rational order which was complete-in-itself, self-subsistent, and self-motivating. They tried to explain reality in its own

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[1] Homer <u>Iliad</u> 19.74-95.
[2] Odysseus Tsagarakis, <u>Nature and Background of Major Concepts of Divine Power in Homer</u> (Amsterdam: B.R. Grener, 1977), 117-19.

terms without recourse to gods, spirits or other entities. However, the basic concepts which the philosophers developed were based on and limited by the myths of Hesiod and Homer. This also led to a prejudice against the spontaneous, since a rational cause was sought for every effect.

A. The Milesians

The Milesians tried to explain everything in terms of something that was already there in the *kosmos* and thus there was stability because everything was made from this one substance. Their philosophy was of matter in which there was one substance. In the case of Thales it was water, which could take any state—solid, liquid or gas. The world was one because it was made of the same substance. The basis for unity was shared substance. However, monism tends to seek an monocausal explanation for things which tends to be deterministic. It also does not provide a basis for explaining relationships or for relationality to have any explanatory power.

Even Anaximander, who held that the universe was composed of four kinds of stuff: earth, water, air and fire, did not regard them as fundamental. Instead he assumed there was only one original stuff from which all else was made. This was *apeiron*, the unlimited, boundless, indefinite which was unperceived and undetectable. It was an abstraction and the first of many such abstractions, as increasingly reality was postulated to be found not in the "life-world," but in abstractions accessible only through reason. Transcendent Being was hidden behind a veil of appearance.

He also conceived of the universe as consisting of pairs of opposites, in particular wet and dry, hot and cold. Through the alterations in the relationship between these opposing pairs he sought to explain change. But he saw these changing relationships as being a perpetual strife:

> Existing things perish into those things out of which they have come to be, as must be; for they pay reparation to each other for their injustice according to the ordinance of time.

There is a continual cycle of injustice and reparation. Thus, hot is punished by cold which in turn is punished by hot as each exceeds their proper domain. This dualism continues throughout Western philosophy and culture, influencing Christianity.

B. The Pythagoreans

I shall examine in greater depth the thought of Pythagoras because as Bertrand Russell said,

> I do not know of any other man who has been as influential as he was in the sphere of thought. . . . The whole conception of the eternal world, revealed to the intellect but not to the senses, is derived from him.[1]

It is with the Pythagoreans and their philosophy of form that dualism becomes more developed and the basic categories which underlie and inform European language and culture were established. Following Hesiod,[2] they conceived of the origin as boundless chaos. However, there is

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[1]Bertrand Russell, History of Western Philosophy and its Connection with Political and Social Circumstances from the Earliest Times to the Present Day London: George Allen & Unwin, 1961), 56.

[2]In Hesiod's cosmogony it is *Moira*, Fate or Destiny, which partitions the world imposing order. *Moira* is later replaced by Zeus who in turn is superseded by Reason. "But the function of the supreme power remains the same, to 'introduce distinction and order.'" F.M. Cornford, From Religion to Philosophy: A Study in the Origins of Western Speculation (New York: Harper

order in the world because the imposition of a limit (*peras*) on the unlimited (*apeiron*) produced the limited (*peperasmenon*). A triangle, for example, is produced in the unordered sand by introducing boundaries or limits. And in music,

> The infinite variety of quality in sound is reduced to order by the exact and simple law of ratio in quantity. The system so defined still contains the unlimited in the blank intervals between the notes; but the unlimited is no longer an orderless continuum; it is confined within order, a *kosmos*, by the imposition of Limit or Measure.[1]

Thus, the world is a *kosmos* displaying order because it has had order imposed on it. It is a natural but imposed order. This order they discovered to be numerical and thus the *arche* of the universe was not matter, but form. Having discovered the ratios between notes that make up a scale, they extrapolated that since the universe is a whole and everyone a microcosm, the same numerical order could explain the whole universe. Hence the age-old quest to explain the movement of the planets as the harmony of the spheres. Indeed according to Aristotle, they went so far as to claim that things themselves were numbers.

As well as the two ultimate principles of Limit and Unlimited, the Pythagoreans recorded other associated pairs of antithetical couples which they arranged in two columns:

TABLE 1

PYTHAGORAS' OPPOSITES

A	B
limit	unlimited
odd	even
one	many
right	left
male	female
resting	moving
straight	curved
light	darkness
good	bad
square	oblong

The ontology is one of conflict between opposites. They are not complementary pairs, nor different aspects of the same whole. Thus, the avowed aim of the struggle becomes the attempt to annihilate or at least subdue the other member of the pair.

This philosophy is both the reflection of Greek culture and at the same time becomes the transmitter of implicit, unexamined presuppositions in European culture that are imbedded in the

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Torchbooks, 1957), 36.

[1] F.M. Cornford, "Mysticism and Science in the Pythagorean Tradition," <u>The Pre-Socratics</u>, ed. A.P.D. Mourelatos (Garden City: Anchor Books, 1974), 144.

language. Since the very categories of thought are contained in the language, it becomes very difficult to step outside them. As Hayek has said,

> It is not merely that the knowledge of earlier generations is communicated to us through the medium of language; the structure of the language itself implies certain views about the nature of the world; and by learning a particular language we acquire a certain picture of the world, a framework for thinking within which we henceforth move without being aware of it.[1]

Until Jacques Derrida and his controversial program of deconstruction, which sought to make explicit what was previously implicit, these implicit views and dichotomies had remained hidden. Derrida's critique of metaphysics focuses on the privileging in European culture of the spoken word over the written word, on the face of it an incredible position, but also exposes other dichotomies as well:

> Western thought, says Derrida, has always been structured in terms of dichotomies or polarities: good vs. evil, being vs. nothingness, presence vs. absence, truth vs. error, identity vs. difference, mind vs. matter, man vs. woman, soul vs. body, life vs. death, nature vs. culture, speech vs. writing.[2]

He showed that the two terms are not held in creative tension, but are placed in a hierarchical order, the first having priority in value over the second. The second term is regarded as corrupt and an undesirable version of the first. So absence is the lack of presence, chaos is the lack of order. This has generally resulted in the preference of unity, identity, and temporal and spatial presence over diversity, difference, and deferment in space and time.[3] The problem with Derrida is that he cannot escape either and merely reverses the dichotomies to favour the previously "oppressed" terms. He is unable to develop a balanced polarity either.

In a further comparison of Oriental and Western polarities,[4] David Hall and Roger Ames suggest that "the whole reductionist enterprise in Western philosophy may be seen as the conquest of B by a transcendent A."[5] The West struggles to abolish **B** and preserve **A**. At the heart of Western thought and philosophy lie these contradictory opposites. They can be found, for example, at the basis of the thought of Bernard Lonergan, the foremost living Catholic theologian.[6] In Lonergan's thought dialectic is defined as, "a concrete unfolding of linked but opposed principles of change." He champions metaphysics over myth, theory over common sense arguing that the former can be objective and foundational. Thus social order, "originated from human invention and convention," is the result of man's "practical intelligence devising arrangements for human living."[7] In many ways Marxism is the natural outcome of this way of thinking.

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[1]F.A. Hayek, <u>New Studies in Philosophy, Politics Economics and the History of Ideas</u> (London: Routledge, 1978), 48.
[2]Barbara Johnson, introduction to <u>Dissemination</u> by Jacques Derrida, trans. Barbara Johnson (Chicago: Univesity of Chicago Press, 1981), viii.
[3]Harold G. Coward. "`Speech Versus Writing' in Derrida and Bhartrhari," <u>Philosophy East & West</u> XLI (April 1991), 143.
[4]For Oriental polarities see Appendix 1.
[5]David Hall and Roger Ames, <u>Thinking Through Confucius</u> (New York: State University of New York Press, 1987), quoted in Angus C. Graham, <u>Disputers of the Tao: Philosophical Argument in Ancient China</u> (La Salle, Ill: Open Court, 1989), 332.
[6]Ronald H. McKinney, "Deconstructing Lonergan," <u>International Philosophical Quarterly</u> 31 (March 1991): 81-93.
[7]Bernard J.F. Lonergan, <u>Insight: A Study of Human Understanding</u> (London: Darton Longman and Todd, 1958), 213-14.

Thus, in English for example, it is almost impossible to find a word that means to have dominion over something or someone, but which also includes the notions of mutual freedom, respect and love. Dominate, subjugate, subject, subdue, control, all have connotations of oppression. The word negative has, dare I say it, negative connotations. A negative person is deficient and bad. Positivity on the other hand is good, being outgoing and bright. Such presuppositions are intricately woven into the vocabulary of the English language[1] and indeed into the way we teach our children.

Also by including good and evil as opposites along with male and female, resting and moving, a moral judgment is imputed to the other members of the column. The principles are thus moral as well as descriptive. Since good and evil are naturally in an irreconcilable conflict, the implication is that other pairs are too.

Good and evil, however, are not true opposites. They are mutually repulsive, can never harmonize and are always in irreconcilable and destructive conflict. The other pairs though are mutually attractive, can harmonise and in doing so can be creative. But by including good and evil in a list along side other pairs, a value judgment is automatically passed onto the other members of the column. They are either elevated or tainted by association. Of interest to this thesis is that resting is good, whereas moving is evil. The ideal is realised when all movement ceases, with the imposition of limit on the unlimited. We will see this ideal again in Aristotle.

Although not included in the Pythagorean list Aristotle recorded, we might add in column A, reason and in column B, emotion. Thus femininity is moving, unstable, emotional, relational, matter, and of course evil; whereas masculinity is resting, stable, rational, self sufficient, spiritual and good. This is why some in the early church did not think women had a spirit or spiritual life and were, on the contrary, the gateway to hell. It has been predominately masculine values which have informed European social, legal and economic structure. This is the source of the deeply prevalent, and until recently largely unconscious, denigration of femininity and exaltation of masculine values.

Pythagoras's table also has further implications for logic and methodology. By regarding the pairs as being in opposition to each other, there is a tendency to seek for a monocausal explanation of reality. Something is caused either by this or by that, but not by both together. A classic example is the sterile "nurture-nature" debate or the supposed great dichotomy between chance and necessity. Monocausal explanations have a tendency towards reductionism and hence determinism. Too often in western science and philosophy there have been pseudo-controversies because of an underlying belief that it is somehow a failing to have to postulate more than one cause or explanation for a phenomena. This mode of conceptualisation has been challenged in

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[1]This conception of the universe as a battleground for the elements is still prevalent in the poetry of the sixteenth and seventeenth centuries: Thus Edmund Spencer wrote:
The earth the air the water and the fire
Then gan and to range themselves in huge array,
and with the contrary forces conspire
Each against other by all means they may.
And John Milton:
Hot, cold, wet and dry, four champions fierce
Strive here for maistery.
Quoted in: Merrill Ring, Beginning with the Pre-Socratics (Mountain View, Ca.: Mayfield, 1987), 25.

science by Niels Bohr's theory of complementarity (light is both a wave and a particle). The reason why it causes paroxysms and confusion is because such a form of explanation is conceptually foreign.

In terms of our discussion of order, by seeing the pairs as being in contradiction, order has to be imposed. A self-organising cosmos requires polarities rather than dualities. There is no basis for developing the notion of spontaneous order since this is a contradiction in terms under Pythagorean categories. In political terms, Justice was defined as a number, a square number, and so a just State would be one composed of equal parts. This notion of an abstract, ideal Justice influenced Plato and western political thought profoundly. It is the basis for the notion of objective abstract human rights.[1] The notion that equality means equality of opportunity or equality of outcome also comes from Pythagoras. Aristotle too was influenced by the theory of the 'Limit' which he equated with the Mean, the natural Limit. He went on to postulate that wealth should be limited and that there was a limit to the size of the State.[2]

Science too has been deeply affected by Pythagorean philosophy. The mathematization of nature is a continuation of that program. So too has philosophy been influenced. Descartes regarded mind and body as being of different substances. The former was characterized by thinking, that latter by extension. The problem is to explain how there can be interaction. The result is that dualism degenerates into Malebranche's occasionalism. If substance is primary, mind acts <u>on</u> matter, God <u>on</u> the world. But if they are of different substances how can they?

C. Heraclitus

In the great debate about change, Heraclitus held that "war is the Father of all," and that the only principle that did not change was that there was perpetual change. "You can never step into the same river twice," because "everything is in flux and nothing is at rest." However, there is still unity in this diversity of all things. It is not a unity of primordial substance, but a stability achieved by a balance between the warring opposites. Heraclitus is interested in becoming, not being. The world is not an edifice but a process, and it is *logos* which determines the exact measure of transform-ations, the *logos* which unites the conflict of opposites. So, having said all is change, Heraclitus finds stability in claiming that there is a law of change. But in attributing this source of stability to *logos*, he continues the Greek prejudice against emotion.

Since the world is in continuous flux, our senses cannot be trusted as sources of understanding or of knowledge. Instead, one has to look within oneself for the unchanging logos. We have to rely on reason because emotions are not to be trusted as they too, are always changing.[3]

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[1]There are no such thing as human rights in the abstract. One's rights are a function of the position one has in society. There are different rights in different societies. These rights are concrete and particular. It may be laudable to expand them, but not by recourse to abstractions which are merely the absolutization of relative culturally determined rights. Equality of opportunity is also a chimera. There is not and cannot be any such thing. A person has to take the opportunities he gets and make the most of them. It is impossible to have equality of opportunity. Everyone has different talents, abilities, parents, friends, teachers etc. Each has his life and is presented with different opportunities. Not everyone can have the opportunity to be an opera singer, or an engineer, or a pearl fisherman, or a farmer, or an eskimo, or an elephant poacher, or a rabbi. The attempt to create a society in which their was equality of outcome resulted, as we shall see, in totalitarianism.

[2]Ernest Barker, <u>Greek Political Theory</u> (London: Methuen, 1960), 55-57.

[3]This contrast between emotion and reason, and the denigraton of the former in favour of the latter, which is so important in western philosophy, is absent in the Confucian tradition of Mencius. Shame, dislike, modesty and courtesy would be regarded as compounds of the two functions, were that distinction made in the first place. David B. Wong, "Is There a Distinction Between Reason and Emotion in Mencius," <u>Philosophy East and West</u> 41 (January 1991): 31.

Heraclitus rejected a sensory approach to knowledge because it was subjective and uncertain. Instead, knowledge could only be obtained through reason, through discovering the logos. Law and reason are predictable and reversible.[1]

If one knows the laws which govern change, it is possible to predict the future since the future is contained in the present, which itself contains the past. In the same way one can, with hindsight, plot how the past seemingly inevitably became the present, so too can one, with sufficient insight, predict the future. In this sense there really is no time and no irreversible progress since in reason there is no arrow of time. One can argue from premises to a conclusion and back again. Laws and reason are predictable and reversible. This is the determinism which has so plagued European thought and science and has infiltrated Christianity as the doctrine of predestination. So Popper finds in Heraclitus the seeds of both Hegel's theory and the historicism which later characterized Marx's thought too.[2]

Thus despite Heraclitus' championing of Becoming as opposed to Being, he was not able to find place in his scheme for an open-ended future, for irreversibility or for the arrow of time. Although change was of the essence, that change was governed by an iron law. His doctrine of laws governing change was preserved, but the idea that all is in a state of flux was lost until the development of contemporary physics.[3]

D. Parmenides

Reacting to Heraclitus, the founder of the Eleatic school sacrificed change for intelligibility. "Being is; non being is not." said Parmenides. Becoming is absurd because if there is only a single substance something cannot come into being out of non-being. Either something is, or it is not, since "nothing can come out of nothing." The conclusion is that the phenomenon of change is just an illusion. Perfection is immutability.[4] So the universe is eternal homogenous and immutable. There is no room for spontaneity or self-generating order. This is a sterile vision of the universe lacking creativty and incapable of bringing forth anything new.

Since to the senses there appears to be change, they obviously cannot be trusted. Only the mind through reason can reach the truth. Again the rationalist need for absolute certainty predominates. Thus the material monism of the Ionians culminated in Parmenides and the fantastic paradoxes of Zeno. In showing that movement was impossible, Zeno was denying time. In reason there is no time. All calculations are reversible because this is the nature of logic. The conclusion is contained in the premises and vice versa. The past is contained in the present in which is contained the future.

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[1]The modern paragon of this way of thinking was Descartes whose methodology of radical doubt made him refuse to accept anything as true which could not be logically derived form explicit premises that were "clear and distinct." Is it logical? was the criterion of truth compared to the empirical method of evaluation, does it work?
[2]Karl Raimond Popper, The Open Society and its Enemies, vol. 1, The Spell of Plato, 5th ed. rev. (Princeton: Princeton University Press, 1966), 14-15.
[3]David Bohm for example champions Heraclitus in his controversial interpretation of quantum mechanics. Reality he says is "Undivided wholeness in flowing movement." David Bohm, Wholeness and the Implicate Order (London: R.K.P., 1980), 11.
[4]Roy K. Hack, God in Greek Philosophy to the Time of Socrates (Princeton: Princeton University Press, 1931), 85.

From Parmenides' unchangeable being, Plato derived his objective and permanent idea. He and Pythagoras laid out the basis of the western scientific program,[1] which until recently regarded the universe as a machine deterministically governed by laws.[2]

E. Plato

Plato, like Confucius lived at a time of great social upheaval. However, they came to very different conclusions as to how order should or could be restored because they had different metaphysical assumptions. Plato's chief interest was political, and this influenced his epistemology and metaphysics which all interlock.[3] In Plato's cosmology we find two opposing and dualistically separate principles of change. One towards disorder, one towards order.

Although Bertrand Russell dismisses Plato's Timaeus as being unimportant philosophically, he recognizes that it greatly influenced ancient and medieval thought.[4] In the dialogue we again find the basic scheme of Hesiod which underlies Plato's vision. The Craftsman or Demiurge when confronted by,

> Discordant and unordered motion . . . brought it from disorder into order, since he judged that order was in every way better.[5]

He does this by "separat[ing] the chaos by imposing patterns in kinds and numbers".[6] He is not the creator of the chaos nor of the eternal ideal Forms which he contemplates and attempts to copy in imposing order on the chaos.[7]

These Forms have an eternal separate existence in a realm beyond time and space. They exist in-them-selves and are unaffected by a knowing object.[8] In this realm exists for example, Justice, Beauty, and an ideal Form of a Table, of which the tables which are in the material world are merely poor imitations or copies. Thus, the ontological theory of Forms also has ethical implications. Absolute values and standards exist in-themselves and are not defined relationally. They would still exist even if no one manifested them. Thus the standard of judgement is abstract and not incarnated. The paradigm Forms are Euclid's geometrical shapes, which are the embodiment of reason. The primary stuff of existence, space is moulded by these eternal Forms into individual shapes. But the copy of course can never be the original model, and in time it is destined to decay. So the Craftsman gave the world-body a world-soul to be its "mistress and governor" so that the body does not sink again into chaos.[9]

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[1]"The basis of the vision of classical physics was the conviction that the future is determined by the present, and therefore a careful study of the present permits an unveiling of the future...We may perhaps even call it the founding myth of classical science." Ilya Prigogine and Isabelle Stengers, Order out of Chaos (London: Flamingo, 1985), 214.

[2]Einstein, as well as opposing the randomness of quantum mechanics, also regarded irreversibility as an illusion. "For him the distinctions among past, present and future were outside the scope of physics." Ibid., 294.

[3]R.C. Cross and A.D. Woozley, Plato's Republic (New York: St. Martins Press, 1979), 186.

[4]Russell, 157-62.

[5]Timaeus, 30A.

[6]Ibid., 55b5.

[7]I.M. Crombie, An Examination of Plato's Doctrines, vol. 2 (London: R.K.P., 1963), 288.

[8]In contrast, real value in Unification Thought is formed by the interaction of the human subject with an object. In economic terms this can be compared with the medieval (and Marxist) quest for the objective "just price" of a commodity, as opposed to the notion that something is worth what someone is prepared to pay for it.

[9]Whether the chaos could have existed without a soul since the soul is the cause of motion, or whether the Demiurge endows the soul with reason and thus reduces it to order is not clear. F.M. Cornford, Plato's Cosmology (London: R.K.P., 1937), 203.

Thus, we find in Plato what Jeffrey Wicken has identified as two opposing, dualistically separated principles of change. There is the entropic recognition that matter tends to decay and become disordered. But countering this is an anti-entropic striving for form. Associated with disorder are running down, degeneracy, the irreversible passage of time and chaos. This view of disorder as being chiefly destructive continues throughout western philosophy. Bertrand Russell was just as gloomy and antithetic about disorder as Plato ever was seeing that due to entropy:

> All the labours of the ages, all the devotion, all the inspiration, all the noonday brightness of human genius are destined to extinction in the vast death of the solar system. . . . only on the firm foundation of unyielding despair, can the soul's habitation henceforth be safely built.[1]

Dissipation is not linked to creativity or possibility. Since order cannot come from disorder, and good is not linked to natural process, Plato provides the ontological ground for a *leitmotif* of conquest and denial.

There are also various other considerations imbedded in the creation passage. Disorder is co-eternal with God and apart from the order within God. Chaos precedes order. More importantly, chaos is fundamentally other than God. God is essentially transcendent, organising creation from the outside and not immanent in the processes of creation. To make the world as much like God as possible, irregularity and disorder have to be eliminated by bringing order to the world. This is not unlike middle eastern creation myths such as the Babylonian *Enuma Elish* in which Marduk, the male god, conquers the primordial chaos represented by the goddess Tiamat.[2] In Plato, "disorder always has negative connotations. In a world of fixed forms, processes that are random or spontaneous can never generate anything of value."[3] The thesis that disorder could be the source of possibility is simply rejected.[4]

Because the world is a product of the imposition of rational order, it is possible for Plato to argue in the <u>Republic</u> that the rulers, philosopher-kings, could discern the original order and through education reconstruct and preserve it.

> The theory of Forms can be applied to the State as to any other . . . product of human activity. Just as all tables have in common a certain *form (eidos)* which makes them form tables and not some other thing, so there must be a *form* of the *polis*. Existing cities like existing tables are copies, more or less imperfect, of the Ideal City. The Ideal City has a real and not merely nominal existence, but its

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[1]Bertrand Russell, <u>Why I Am Not a Christian</u> (New York: Allen & Unwin, 1957), 107.

[2]It is however unlike the Chinese creation myth which is so different to that of other cultures that China has often been accused of not having a creation myth. There is no epic creation. Instead everything starts from the undifferentiated, shapeless, *hun-tun* which resembles a large egg. "Chinese cosmogony was an utterly mundane affair since the division of the primordial raviolo of *hun-tun*, the passage from one to two, happened spontaneously, by and of itself (*tzu-jan*), and this way of happening naturally continues to resonate (*ying*) throughout the ten thousand things of the phenomenal world. There was no dramatic spectacle of the wilful or purposeful activity of a creator at the beginning since, in a sense, nothing happened that is not always happening." Norman J. Girardot, "Behaving Cosmogonically in Early Taoism," <u>Cosmogony and Ethical Order: New Studies in Comparative Ethics</u>, ed. R.W. Lovin and F.E. Reynolds (Chicago: University of Chicago Press, 1985), 73.

[3]Philip Hefner, "God and Chaos: The Demiurge Versus the *Ungrund*," <u>Zygon</u> 19 (December 1984): 477.

[4]The idea that chaos is creative is a minority position in European thought. Berdyaev's ultimate reality, *Ungrund*, was dynamic, nonobjective and indeterminate pure potentiality. *Meonic* freedom is at the centre of reality and God himself "arises out of the chaos and enables chaos to become actualized possibilities that retain their unquenchable freedom." Ibid., 479.

existence is incorporeal, 'in heaven perhaps' . . . In the 'Form' city there are no political problems, everything is unchanging and eternal.[1]

Thus the enterprise of the <u>Republic</u> is to prevent decay by creating a state which does not change. The Forms are perfect, not perishing and indeed more real than the things that are in flux. Karl Popper in his critical discussion of Plato explains that the theory of Forms fulfils three different functions. First it makes it possible to obtain pure scientific knowledge and develop a normative political science, even though society is changing. Second it is a theory of change which explains degeneration. Finally it makes possible social engineering, since knowledge of the perfect Forms will enable rulers to design the best possible state, draw up a blueprint of the society aimed at, and then to work out a way to implement it. Once it is established, "Arrest all political change!" This Popper claims is the idealist slogan since once the ideal is realised, "change is evil, rest divine."[2]

Again this view can be sustained because order has to be imposed. Without its imposition there is chaos. So Reason has to rule over Necessity. Necessity in Plato has the connotations of spontaneity, coincidence, chance and is purposeless.[3] Law and order have to be imposed by design.[4] Therefore, the creator is always outside the creation. Since this was the case at the creation of the universe, it can be justified or rather it is mandated in the establishment of an ideal social order. To argue that world order could arise by chance and necessity from "the blind working of lifeless powers in the bodily elements," would be atheism and thus completely unacceptable to Plato.[5]

Plato's Republic is ruled over by a philosopher king, who having a gold soul is uniquely able to discover the Forms and guide the lower orders. The ideal state is a dictatorial government without laws in which everyone is subject to the arbitrary will of a leader.[6]

The form of government described in the <u>Laws</u> is second best, being a constitutional government under law, although of course the laws are still made by the philosopher king, such as Solon. Because there is one eternal ideal, once it is in place,

> . . . free thought, criticism of political institutions, teaching new ideas to the young, attempts to introduce new religious practices or even opinions, are all pronounced capital crimes.[7]

One wonders how Plato's beloved Socrates would have fared in such an ideal world! Even though Ronald Levison tried to defend Plato from Popper's revisionist interpretation, he still has to admit

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[1] T.A. Sinclair, <u>A History of Greek Political Thought</u> (London: R.K.P. 1967), 145.
[2] Ibid., 86.
[3] Cornford, 159-66.
[4] Ibid., 167.
[5] Ibid., 59.
[6] "The greatest principle of all is that nobody, whether male or female, should be without a leader. Nor should the mind of anybody be habituated to letting him do anything at all on his own initiative; neither out of zeal, nor even playfully. But in war and in the midst of peace- to his leader he shall direct his eye and follow him faithfully. And even in the smallest matter he should stand under leadership. For example, he should get up, or move, or wash, or take meals...only if he has been told to do so. In a word, he should teach his soul, by long habit, never to dream of acting independently, and to become utterly incapable of it." Plato quoted in Popper, 7.
[7] Ibid., 195.

that the Forms are the ideal and that it is the philosopher king who discovers them and puts them into reality.[1]

No wonder Popper found in Plato the prototype of the totalitarian utopian societies of socialism. If there are ideal Forms which are blueprints there is obviously an ideal end-state for society. This is why books written by luminaries such as Thomas More describe in exhaustive detail what such a society would be like. It would be rational, planned and static. A closed society in which everything has its place, is routine, mechanical, conservative, authoritarian, self-centred, with a closed morality, and a religion for social cohesiveness which leads to ritualism and dogmatism. In summary, it is a product of the intellect, which is why it is so attractive to intellectuals.

F. Aristotle

Aristotle further develops the philosophy of stasis. He inherits from Plato the conviction that reality lies in form, although he rejects Plato's notion of universal Forms existing separately from individual things. In Plato, the ideal Form was in the past. Afterwards there was degeneration. Aristotle's biological interests led him to postulate the ideal Form as the final cause, which lies in the future.[2]

The form of an object is its actuality, what it has become at a particular moment. It is immanent, not transcendent. The permanent aspect of an object, matter, persists and changes by replacing one form by another. Thus, matter has the potentiality for change, it is capable of being informed.

The fundamental mode of change is from potentiality to actuality. Thus, an acorn has the potential to be an oak tree, and in time actually becomes one. The agent of change though, must already have the form to which the object of change is moving. But that means that self-caused change is impossible since something cannot be actual and potential at the same time. Thus a boy is potentially a man, but before there could be a boy there had to be an actual man. And for a liquid to be heated there has to be an agent existing at a higher temperature than it.

Thus to explain the world of potentiality, Aristotle was led to postulate the existence of some actuality at a level beyond potentiality or perishing things. This highest being is pure actuality. Activity (*energia*) flows unimpeded and tirelessly as compared to *kinesis*, the arduous process of growing up. It is the unmoved mover, the First Cause which moves all the world by drawing the world towards itself.[3]

All things are moving in a certain direction towards a certain goal. Everything possesses an internal perfecting principle (entelechy) which directs it towards its final end. Every object is trying to realise a certain form. The ultimate goal is one in which all potentiality has been actualized. This is a state of rest where there is no more change. The unmoved mover is the goal of

[1] Ronald B. Levison, In Defense of Plato (New York: Russell and Russell, 1953).
[2] Karl Popper, The Open Society and its Enemies, vol. 2, The High Tide of Prophecy: Hegel, Marx and the Aftermath, 5th ed. rev., (Princeton: Princeton University Press, 1966), 5.
[3] This contrasts with the Chinese cosmogony: "Infinite regression from the Chinese perspective leads back not to a Prime Mover but to a spontaneous Prime Movement (*tzu-jan*) and its continuing Primary Resonance (*ying*) among all things...Because of the original free gift of life, the first grace of movement, there is an ongoing reverberating interaction and harmonious ordering of all the ten thousand things of the world." Girardot, 74.

all change and all things change because of a natural tendency (*dynamis*) to become like the unmoved mover.

> . . . it is not that God loves the world, but that the world loves God. He is the ideal to which all other things are more or less remote approximations; He is the end to which they move; but we are not to conceive of him acting on or in them.[1]

The unmoved mover on the other hand, does nothing. He is the final and not the efficient cause. He lives a life of pure contemplation. This contemplation is not of the world, which is contingent and antagonistic, but contemplation of himself. Although in Aristotle there is development, the goal of that development is to achieve a state of rest.

At the same time because the basic categories of analysis are act and potency, things are understood autonomously, and not as they stand in relation to other beings. Aristotle's being-in-itself is expressed as substance, and substance is an individual thing. Each individual thing is truly in-itself because it has all reality immanent in itself, since reality is identified with the thing (*res*). Reality is not the relationship but the thing.[2] This view affected the development of Christian theology (as well as science), until recently. The chief attributes of God to be emphasised were omnipotence and omniscience and not the relationality that flows from viewing God primarily as love. For example, a European in answer to the question, "who are you?" might, unconsciously influenced by the Aristotelian philosophy which permeates our language, list the acts (attributes) associated with him. For example, "I am a doctor, I am kind, thoughtful, strong, timid, tall, thin etc." In contrast, a person whose basic (unconscious) philosophical outlook was relational (e.g. Taoist or Confucianist) might reply, "I am so-and-so's son, husband, brother, father etc." A person, and indeed all reality, would be defined relationally. Aristotelian and indeed Greek philosophy in general is poorly equipped to explain relationships because of its focus on being-in-itself. Thus in the great Christological debates the key category for explaining the divinity of Christ and the Trinity was substance. Jesus and God are consubstantial or *homoousios*. It was the ontological and not the ethical unity of Father and Son which was emphasised. Since order is concerned with the relationships between elements, Aristotelianism is unable to deal with the idea of self-generated order.

The dichotomy between form and matter, act and potency, leads to dualism in which there is no relationship of give and take between the two. The result is a gulf between God and the creation, in which there is no dialogue and no mutual interaction through which both are changed. As Edward Caird explained:

> Both the Platonic and Aristotelian philosophies were attempts to explain the world on the principle of Anaxagoras that "all things were in chaos till reason came to arrange them." In other words, they started from a dualism of form and matter

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[1]Edward Caird, <u>The Evolution of Theology in the Greek Philosophers,</u> vol. 2 (Glasgow: James MacLehouse, 1904; reprinted Scholarly Press, 1968), 12.
[2]This problem with explaining relationality was nicely solved by Leibnitz whose monads were completely self-contained without windows but were living out a program with such precision that it looked as if things existed in perfect harmony. Each monad reflected the state of the whole system down to the smallest detail. It is as if we are all looking at videos which have all been perfectly synchronized.

which they sought to overcome by subjecting the latter to the former. The ultimate tendency of such a mode of thought is shown in the Aristotelian conception of the relations of God and the universe.[1]

God is a self-centred intelligence eternally at one with itself. The world by contrast is antagonistically divided, trying but always failing to realise the ideal which is God. They never meet and there is only frustration on the part of the world, which of course God is unaware of.

Aristotle, despite his scientific bent, is still critical of experience as a source of knowledge. It is designated as mere opinion because its source is the sensory world, which is always changing and is essentially chaotic. Reason is the only source of pure knowledge. Matter is potentiality and thus changing and therefore "bad". God though, is pure act, with no matter, and thus is unchanging, unmoving and at rest. Man's highest activity is to contemplate with reason the ideal.[2] The natural implication of this is that men are more rational and thus unchanging than women, who are more emotional and changeable. The former are thus more spiritual and the latter more physical. From here masculinity quickly is equated with good and femininity with bad. Men can have a relationship to God, but women cannot. Thus masculine values, competitiveness, rationality, reserve have been favoured over and against feminine ones of relationality, emotion and intimacy.

In Aristotle, the prejudice against matter is further developed since it is potentiality, and inherently unstable, chaotic and changeable. In Plato the Demiurge is outside the chaos, imposing order upon it. In Aristotle the ideal is pure act. God the unmoved mover, the final cause, is pure thought, complete self-fulfilment. Being perfect and transcendent, God does not concern himself with the imperfect sensible world. His activity is one of eternal thought about himself. The world is attracted towards him through love and desire, but he is very much outside the world. He is not even the creator.[3] Matter is ungenerated and eternal, although it never exists without being informed. As in Plato, there is no intrinsic relationship between God and the stuff from which the universe is made. There is no give and take.

Aristotle's ontology uses the categories of form and matter. Because of his interest in things as individuals, as beings-in-themselves, the

> . . . relation and interaction among natural bodies are regarded as extrinsic or accidental, and not intrinsic or essential to the very being of the natural bodies, [and so] the world becomes a disjointed totality rather than an integrated whole in which each individual natural body participates in the *telos* of the organic whole.[4]

The problem becomes one of how to apply the categories to the order of human existence in society.[5]

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[1]Caird, 35.
[2]This is found too in Aquinas for whom the basic act which composes the beatific vision is knowledge which thus requires a supernatural elevation of the intellect (*lumen gloriae*). For the Scotists in comparison the basic act was love. Ludwig Ott, Fundamentals of Catholic Dogma, 4th ed. (Cork: Mercier Press, 1960), 477-78.
[3]David Ross, Aristotle (London: Methuen, 1949), 184.
[4]Carver T. Yu, Being and Relation: A Theological Critique of Western Dualism and Individualism (Edinburgh: Scottish Academic Press, 1987), 117.
[5]Eric Voegelin, Order and History, vol. 3, Plato and Aristotle (Louisiana State University Press, 1957), 333.

The constitution is given the position of form, while the citizens are matter. In a manner analogous to Plato's Craftsman, there is a lawgiver who gives the constitution and the laws. The "laws should be made to suit the constitution, and not the constitution the laws." These laws are essentially conventions, artificially designed by man. Aristotle distinguishes between right and defective constitutions. The right ones are kingship, aristocracy and polity, and their defective corollaries are tyranny, oligarchy and democracy in which government is in the interests of a particular group. The worst form of government is popular urban democracy because the right of the multitude (who are matter) supersedes the law (the form) by decrees, and thus "where the laws do not rule there is no constitution." In any event, from his empirical survey of Greek constitutions and forms of government, Aristotle concludes that there is a perfect order and best constitution which can be realised in history.[1] But it is still a static vision, even if more practical than Plato's.

This prejudice against matter in favour of reason had implications not just for social life, but also for personal life. The Stoic ideal was one in which a man as closely approximated Aristotle's God as possible:

> The wise man, being self sufficient, alone is free and alone is king . . . he never yields to anger, or resentment, or envy, or fear, or grief, or even to joy or to lust; nor does he experience pity or compassion, or show forgiveness . . . [2]

Reason rules the passions. Such a man is not relational but self-sufficient.[3]

Since matter is dead, lifeless and chaotic, it cannot be the source of life or self-generated spontaneous order. To have argued otherwise was atheism.

As well as being an original thinker, Aristotle synthesised the ideas of others. In his account of causality, he tried to present a unified account, drawing together the insights of previous philosophers. The efficient cause, that by which a thing is wrought, had been emphasised by Empedocles; the material cause, that in which a change is wrought, had been emphasised by the Milesians; the formal cause was Plato's contribution with his notion of Forms. Aristotle added his own contribution, the notion of a final cause. Although the last two have been ignored by modern science, there are signs that Aristotle's world is being looked on with greater interest as Descartes' wanes. However, the fact remains that causality easily tends to determinism, a traditional definition of which is, "Every event has a cause." So for every event B, there is an event A (cause), whose necessary consequence (effect), B is. Since A was likewise caused, very quickly we end up with all effects being the necessary consequence of the First Cause. In Aristotle's version the present is determined by the future whereas in the Atomists' everything was determined by the past. Aristotle's ideal form is in the future whereas Plato's was in the past.

G. The Atomists

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[1] Ibid., 323.

[2] William L. Davidson, The Stoic Creed (New York: Arno Press, 1979, reprint of 1907 ed.), 149-50.

[3] Thorleif Boman, who characterises Greek thought as static, and Hebrew thought as dynamic based on an analysis of their languages, makes an interesting comparison between the `ideal' Greek and `ideal' Jew: "When Socrates was seized by a problem, he remained immobile for an interminable period of time in deep thought; when Holy Scripture is read aloud in the synagogue, the Orthodox Jew moves his whole body ceaselessly in deep devotion and adoration...Rest, harmony, composure, and self-control—this is the Greek way; movement, life, deep emotion, and power—this is the Hebrew way." Thorleif Boman, Hebrew Thought Compared with Greek (New York: Norton, 1970), 205.

The Atomists, Leucippus and Democritus, thought the world was composed of indivisible atoms, eternally in motion, purposelessly moving through space, and deterministically governed by natural laws, as opposed to mind. Nothing happened by chance. This conception of an indivisible atom, which came in various shapes and sizes, could, they claimed, account for all that is known of the world. The atoms go off in different directions like billiard balls in a completely predictable and deterministic manner. They tried to explain every-thing without recourse to the notion of purpose or final cause. In this, they are the philosophers most similar to modern scientists.

H. Conclusion

Thus the two alternatives presented by the mainstream of Greek philosophy are a God who is outside the world and imposes order on the world, or a world which functions like a machine automatically following a course prescribed by law. Thus says Ilya Prigogine, who won a Nobel prize for his work on the thermodynamics of non-equilibrium systems,

> Western thought has always oscillated between the world as an automaton and a theology in which God governs the universe.[1]

In Greek philosophy there are two types of order distinguished: *Kosmos* which is the order of nature (*physei*). It is independent of man's will and is the product of the *logos*. This order results from the imposition of law on the chaotic world. A corollary of this view is the argument from design. Because the origin is chaos, and order has to be imposed, if it is possible to discern order in the world this is evidence of a designer, since order cannot come about spontaneously. Barrow and Tipler, in a survey of design arguments, find the argument in Anaxagoras, Socrates, Plato, Aristotle, and Diogenes[2]. The Roman Lucretius was one of the few who argued to the contrary that,

> . . . nothing in our bodies was born in order that we might use it, but the thing born creates the use . . . The ears were created long before a sound was heard . . . They cannot, therefore, have grown for the sake of being used.

However any seminal ideas of evolutionism were brought to an abrupt halt by the overwhelmingly influential work of Plato and Aristotle whose views were "incompatible with any conception of irreversible cumulative change taking place in the real world."[3]

The other type of order is *taxis*, which is the result of the deliberate arrangement of men. It is artificial and conventional. Sparta was long held by Descartes and others to be the acme of the Greek nations because its laws were the product of design and originated by a single individual and thus they all tended towards the same end. This distinction between these two types of order persisted until the 17th century. Then the category of order as the result of human activity, but not human design, was finally elucidated.

The following elements contributed to the notion of order in Greek philosophy which predominated in Europe until the seventeenth century.

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[1]Ilya Prigogine and Isabelle Stengers, Order Out of Chaos: Man's New Dialogue with Nature (London: Flamingo, 1985),
[2]J.D. Barrow, J.D. and F.J. Tipler, The Anthropic Cosmological Principle (Oxford: Oxford University Press, 1988), 31.
[3]Philip Weiner, ed. Dictionary of the History of Ideas (New York: Charles Scribner's Sons, 1973), s.v. "Evolutionism," by Thomas A. Goudge.

1. Permanence is good, change is evil.
2. Order has to be imposed on chaos.
3. Matter is changeable but form is unchangeable.
4. The senses are unreliable.
5. Knowledge comes from reason alone.
6. The ideal is pure act.
7. Perfection is static.
8. The ideal is autonomous and not relational.
9. God is outside the world.

II. Roman Law and Religion

The final legacy from the classical world I wish to examine are Roman law and religion. Although no one practises the latter today, its corruption had profound implications on the European view of the state.

A. Roman Law

Although Socrates recognized that there were unwritten laws in every country, which predated the state and were not necessarily rational and could not necessarily even be articulated rationally, Plato his disciple defined law as reasoned thought embodied in the decrees of the state. Aristotle, being of a more empirical bent, recognized that customary law was more important than written law and stressed that it was, "more proper that law should govern than any of the citizens." Cicero, through whom the classical liberal tradition was transmitted, confirmed that law, morality and justice were logically connected, and thus an unjust statute was not a law. The *jus gentium* and *jus civile* were to be evaluated by the *jus naturale*, the immutable divine laws of the universe. As to the authority for law originally, this was the consent of the people. Classical Roman civil law was almost entirely the product of law-finding by jurists, and only to a very small extent the product of legislation. The ideal of the early Greeks and the Roman Republic was an *isonomia*, a government by known rules and not by public policy.

Roman law evolved over a long period of time from the Twelve Tables and enactments of popular assemblies to an elaborate system in the Empire,

> . . . no longer derived from popular will but rather from the exalted embodiment of
> all power and justice in the civilized world, that is, the ruler.[1]

However Justinian, the great codifier of the Roman law, "discovered" and referred to an "ancient law" by which the Roman people had transferred to the emperor all their authority.

> What the emperor has determined has the force of a statute; seeing that by royal law
> which was passed concerning his authority the people transfers to him and upon him
> the whole of its own authority and power.[2]

Aristotle of course, would have recognized that this, by definition, was not a law, but a constitutional arrangement, had such a contract even been enacted. However by calling it a law, Justinian conferred on this arrangement immutability and hallowedness. So what pleases the prince came to have the force of law. Law became an expression of will indistinguishable from commands.

Although the source of all public authority was the people, the Roman State, the *respublica*, was above them, superior to every individual. As Professor Meynial describes;

> It is invested with an unlimited authority over the individual and the power to exact
> from him the sacrifice of his personal interests, and even of his life. . . . This

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[1]John W. Barker, <u>Justinian and the Later Roman Empire</u> (Madison: University of Wisconsin Press, 1966), 167.
[2]Ulpian, <u>Institutes I</u>, in Naphtali Lewis and Meyer Reinhold, <u>Roman Civilization</u>, vol. 2, <u>The Empire</u> (New York: Columbia University Press, 1955), 538.

absolute authority of the State is as noticeable in the late Empire as under the kings. It is this alone which can saddle a man for life with the duties of a *curialis* even against his own wishes, and makes possible the kind of state socialism which we meet with after Diocletian.[1]

By setting up the State with this authority, the emperor became the absolute master and the civil servants provisional incarnations of the majesty of the State.

This view of the rational, purposive nature of law and its source in the sovereign was also held by Aquinas.

Laws are standards of conduct which have a binding, or obligatory character. This can be understood only if laws have some kind of rational origin . . . [and so] . . . Aquinas regarded legal control as purposive. Laws, he concluded, are ordinances of reason promulgated for the common good by the legitimate sovereign.[2]

Roman law came in the course of the middle ages to be adopted in every continental country of Europe. This law was, as we shall see, very different to common law whose authority rests not on reason but on custom and tradition. Old laws are good laws. Even Scots law is largely based on Roman law. The old common law, with its authority rooted in custom and limiting the power and authority of the government, survived only in England.

B. Roman Religion

The old religion of the practical and unphilosophical Romans was based on the family and the gods of the hearth.[3] It was an agrarian religion and, for a people that became so powerful, very primitive, which made them more susceptible to foreign notions and practices. As Rome became increasingly embroiled in wars, a state religion and College of Pontifices was organised to petition the gods for events which concerned the whole community. As the Empire grew, moving east, the religion was exposed to Hellenic paganism, Greek philosophy and the Oriental mystery religions. This profoundly influenced Roman culture. As the Roman armies moved East, the conquering city was viewed by the vanquished as a deity and in Alexandria, Caesar allowed himself to be proclaimed a god. In Rome though, he remained a mere mortal, of which he was reminded during victory parades by someone standing at his elbow. In time as they collected more and more foreign gods and citizens, Roman tradition was turned upside down. Whereas before the emperor was merely the "Princeps" amongst the Roman aristocracy, the pressures of legitimation of such a far flung empire led to the development of an imperial cult:

The person and power of the sovereign were holy things, that is, consecrated to the gods and approved by them, but they were not divine things. Flattery and the influence of Eastern ways of thought tended from the reign of Augustus onwards to obliterate this distinction. The Imperial power, as it really was, namely, the

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[1] Ed. Meynial, "Roman Law," in The Legacy of the Middle Ages, eds. C.G. Crump and E.F. Jacob (Oxford: Oxford University Press, 1932), 382.
[2] Paul Edwards, ed. Encyclopedia of Philosophy (New York: Macmillan, 1967), s.v. "Philosophy of Law, History of," by M.P. Golding.
[3] Albert Grenier, The Roman Spirit in Religion, Thought and Art (New York: Cooper Square, 1970), 84, 93-97.

concentration of supreme authority in the hands of one man, was the Roman version of Eastern kingship, of which divinity was the attribute.[1]

At the same time that he initiated the cult of emperor worship and tried to restore the old State religion, Augustus gradually concentrated in his own hands the functions of the Senate, the magistrates and the laws.[2] The deification of the emperor rubbed off on the State, which took on a life of its own as it outlived the emperors. It came to be the source of all authority. Gradually the Empire slid into totalitarianism as the State took over more and more of civil society.[3] This in part is why the Roman people did not resist the barbarian invasions. They had lost faith in the Empire because its values were so contrary to those of the old Rome.

In the East the position of the State and emperor became even more exalted. Christians in Constantinople offered sacrifices to the statute of Constantine despite his stipulations to the contrary.[4] It was further enhanced and expanded by the status of the imperial office in Christian thought,

> As God's earthly deputy, the Emperor had both the prerogatives and the responsibilities to put the Divine Will into action through his capacities as a lawgiver. His subjects must be disciplined, guided, protected, and nurtured by his application of Christian principles to the regulation of their lives and action.[5]

So Justinian, the great codifier of the law, promulgated New Laws which reveal,

> Justinian "the Emperor who never sleeps," benevolent, implacable, paternalistic, authoritarian, watching carefully over every detail of his subjects' lives.[6]

The divine emperor with the sole authority to create law was confused with the Christian God who created the law.

In the middle ages the Justinian model of Roman law was eagerly adopted as it bolstered the authority and legitimacy of the rising royal absolutism and the doctrine of the divine right of kings. The princes' authority had a divine origin, and laws were not an expression of the will of the community but, in Bodin's view, were commands of the sovereign in exercise of his power.

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[1]Ibid., 379.
[2]Donald Dudley, The Romans: 850 B.C.-A.D. 337 (New York: Alfred A. Knopf, 1970), 144.
[3]Ibid., 277f.
[4]Arnaldo Momigliano, "How Roman Emperors Became Gods," The American Scholar 55 (Spring 1986): 191.
[5]John Barker, 167.
[6]Ibid., 172-73.

III. Conclusion

As has been shown, the concept of order which came to dominate nearly all of Europe was that of Greek philosophy and Roman government. The world was seen to be chaotic, unless order was imposed from above. This view informed the language and culture and the very categories of thought which Europeans have, such that it is almost impossible in English at least to find the words to describe spontaneous order. The categories of thought are not at all developed, compared to the Orient, where the polarities of Taoism are the source of spontaneous order.

Because conceptually the idea of order coming about spontaneously and naturally has seemed so absurd, the political and economic implications have exalted the position of government and supported government regulation and intervention. This line of thought culminates in Hegel's view of the Prussian State as God on the earth, and out of Hegel developed fascism and communism.

CHAPTER 2

THE CARTESIAN REVOLUTION: DETERMINISM, REDUCTIONISM, AND TOTALITARIANISM.

In this chapter we shall examine the implications of Greek philosophy for science and social thought.

I. Galileo, Descartes and Newton

The classical model of Newtonian dynamics was derived from the Atomists through Bacon, Descartes and Galileo. It was mechanical, reductionist and determinist. Galileo discovered laws of motion and founded the science of mechanics. He also started the mathematization of nature, denigrating as merely subjective sense qualities not susceptible to mathematical treatment. This epistemological revolution led to the abandonment of Aristotelian science in general, and the notion of teleology in particular. It set the course and pattern for the future of scientific development.

Sitting on top of a stove during a thunderstorm Rene Descartes started to doubt everything. The only thing which remained indisputable that was that doubting was occurring. If there is doubting there must also be a doubter. Thus he concluded, "I think, therefore I am." From this single axiom he tried to reconstruct all other knowledge on the firm foundation of reason. In 1619 he had a dream from which he awoke convinced that all nature was a vast geometrical system. From this new insight he expanded his project. He,

> . . . neither admits nor hopes for any principles in physics other than those which are in Geometry or in abstract Mathematics, because all the phenomena of nature are explained, and some demonstrations of them can be given.[1]

He set out to reconstruct the world from the axioms of mathematics. He expressed his quest in the following words, "Give me extension and motion and I will reconstruct the universe." He reduced the world to trajectories of single material points definable by coordinates.

In 1689, Newton, using Descartes' mathematics, proposed the three laws that governed the motion of material bodies. They imply that the motion of a body through space is determined entirely by the forces that act upon it after its initial position and velocity have been fixed. It was supposed that these laws, which enabled the workings of the solar system to be described with such precision, applied to all particles including atoms.

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[1]Quoted in Morris Kline, <u>Mathematics in Western Culture</u> (New York: Oxford University Press, 1953), 105-06.

Just as the trajectories of billiard balls can in principle be reversed, all movement from point A to point B was regarded as perfectly reversible. The impulse for movement has to come from outside, and there is no notion of self-organisation. Because everything is reduced to mechanical laws and cause and effect it is inherently deterministic. Thus as Pierre Laplace described,

> . . . [if] an intelligence . . . could have a knowledge of all forces controlling nature together with the momentary conditions of all the entities of which nature consists [and] if this intelligence were powerful enough to submit all this data to analysis it would be able to embrace in a single formula the movements of the largest bodies in the universe and those of the lightest atoms; for it nothing would be uncertain; the future and the past would be equally present to its eyes.[1]

The universe was viewed as a great machine, a clockwork universe. God, for those who, unlike Laplace, required such a hypothesis, was the Great Clockmaker, who created the world and left it to run according to his immutable laws. Aristotle's four causes had been reduced to one, the efficient. Special contempt was reserved for the notion of a final cause, teleology being the closest the ancients came to self-generated order. The mechanical world of the deist was static and timeless. Thus modern science has no room for singularities, for the particular and the unique, since the world in this view is characterized by the generalizable, the abstractable and the repeatable. History is abolished in the laboratory.

Everything that has ever happened in the universe, everything that is happening now, and everything that will ever happen, has been unalterably determined from the first instant of time. Since motion is determined by the initial conditions, and interacting forces, which are law-abiding, even though we cannot see the future, it has already been fixed in minute detail. In that case since the past, the present and the future are all contained in the state of the universe, there is essentially no time. In the same way that a machine can be run backwards, so too could the universe, since everything is essentially reversible.

Determinism is merely a secularised version of predestination. Instead of God being sovereign, every event happens because of necessity. It has to happen; the universe has no choice. Whether it is the laws of mechanics or the laws of history, everything is predetermined and to those with the "knowledge", predictable.

The state of the universe, or at any rate small systems in laboratories, was reduced to mathematics, which enabled successful predictions to be made which seemed to verify the theory. Later fields came to replace particles as the fundamental entities. But they are still treated according to the Newtonian paradigm.[2] Thus the paradigm is essentially reductionist, claiming to be able to describe in principle the whole universe in terms of the coordinates of particles and the forces acting on them. The goal is to reduce everything to what scientists call a *Lagrangian*, a single simple formula that can explain the universe. This paradigm and the mechanical and

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[1]Pierre Laplace, <u>A Philosophical Essay on Probabilities</u> (New York: Dover, 1951), 4.
[2]Paul Davies, <u>Cosmic Blueprint</u> (New York: Simon and Schuster, 1988), 12.

mathematical language associated with it has, because of the extraordinary success of physics, permeated and distorted other disciplines which tried to emulate the success of the "hard sciences."

A further implication of the clockwork model is that if there is something wrong it can be mended. Thus if there is something wrong with the machine called "man" it should, in principle, be possible to fix him. Likewise society can be redesigned and remodelled according to the relevant laws. Thus much psychology and social philosophy talks about giving people the "tools" for the job and using a "blueprint" to do it. As will be seen, this language and viewpoint is based on a category mistake. Man and society are not machines. They were never designed and there are no tools which can be used to fix them.

II. Determinism

Max Jammer has isolated three principles which underlie this reductionism[1]: the principle of epistemological reduction—to understand the whole it is sufficient to understand the parts; the principle of nomological reduction—laws pertaining to the whole are logical consequences of laws pertaining individually to the parts; the principle of ontological reduction—the whole has no reality beyond the reality of the parts. A classic example of this latter view is the statement by Francis Crick, co-discoverer of the structure of DNA that,

> . . . the ultimate aim of the modern movement in biology is in fact to explain *all* biology in terms of physics and chemistry.[2]

In other words biology can be reduced to chemistry, which in turn can be reduced to physics, since the laws of physics apply to all particles, be they in rocks or organisms. Thus there is no such thing as a "dog", which is more than the combination of its constituent chemicals. A further example is the attempt by Edward Wilson to biologize the social sciences, by developing a biological basis for all social behaviour. Thus sociology and psychology would be reduced to sociobiology.

Following this research program scientists have, until recently, focused almost exclusively on linear systems, ones in which cause and effect are related proportionately. The classic example is the stretching of a spring when weights are attached to it. Simple systems are isolated under laboratory conditions and one parameter is varied while the others are kept constant. From this they hope to describe the complex on the assumption that the whole is merely the sum of its parts.

A. Mathematics

In mathematics this quest continued as well. In England Bertrand Russell and Alfred North Whitehead in their Principia Mathematica made a major contribution by reducing arithmetic to the rules of formal logic. In Austria the Vienna Circle, led by Rudolf Carnap, and inspired by a misreading of Ludwig Wittgenstein's Tractatus Logico-Philosophicus[3], attempted to reconstruct our

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[1]Max Jammer, "Integrative Concepts in the Physical Sciences," in Organisation and Change in Complex Systems, ed. Marcelo Alonso (New York: Paragon House, 1990), 238.
[2]Francis H.C. Crick, Of Molecules and Man (Seattle: University of Washington Press, 1966), 10.
[3]Wittgenstein said his Tractatus was a work of ethics. In it he tried to construct a logical language and thus show the limits of language. This was his picture theory of language. Since it was impossible to speak meaningfully about the most important matters (ethics and religion), because such concepts could not be contained in language he suggested that "we remain silent." The logical positivists took this to mean that metaphysics is meaningless. The logic of Wittgenstein's position made it impossible for him to

knowledge of the world from first principles based on a purified language. They were pursuing the vision of Pythagoras and Descartes who had also tried to mathematicize the world.

B. Psychology

Behaviourism has been one of the most important and influential psychoogical theories this century, its most notable advocates being, John Watson, Ivan Pavlov and B.F. Skinner. They rejected, either for methodological or metaphysical reasons, mental events. They were not in the public domain and thus unverifiable scientifically, and they were mythical, or, as Gilbert Ryle put it, a ghost in the machine. There was nothing to study beyond behaviour. In this they were consciously following the Newtonian paradigm, and by reducing emotions and "mental events" to physical processes which were caused by external stimuli, they expected to be able to predict and control peoples' behaviour.[1]

Here we see one of the great paradoxes of this way of thinking. On the one hand the reductionist model is deterministic and rationalistic, but on the other hand, proponents think that somehow they themselves can use this knowledge to change the direction of history. The same tension is found in Marxism-Leninism between the economic determinism and the theory of the vanguard of the people leading the revolution and changing or speeding up what is inevitable.

C. Politics and Economics

The Cartesian revolution had a profound impact upon social, political and economic theory. Thomas Hobbes, a contemporary of Descartes was only the first, if not one of the more profound, who attempted to devise a theory of politics with the same rigorous method that characterized geometry. He directly applied the laws of motion to explain human behaviour, after establishing the primary axiom by reducing human motivation to self-interest alone. From this he argued that in the state of nature without government, there would be no society, and life would be, "solitary, poor, nasty, brutish, and short."[2] So man establishes a contract which gives all power to a sovereign whose job it is to impose order.

1. The roots of totalitarianism

Several scholars have traced the genealogy of modern day totalitarianism. One such is J.L. Talmon who traced its roots to the Cartesian revolution outlined above.[3] Following in the footsteps of Descartes, the *philosophes*, such as Helvetius and Holbach believed that truth is objective, stands on its own, and can, and would, be recognized by man. Helvetius believed in abstract Man *per se*. From all this it follows that,

> . . . if there is such a being as Man in himself, and if we all, when we throw off our accidental characteristics, partake of the same substance, then a universal system of morality, based on the fewest and simplest principles, becomes not only a distinct possibility, but a certainty. Such a system would be comparable in its precision to geometry . . . this universal system of ethics is a matter of intellectual cognition.[4]

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dispute them.
[1]Raymond J. Corsini, Concise Encyclopedia of Psychology (New York: John Wiley, 1987), s.v. "Behaviorism," by T.H. Leahey.
[2]Thomas Hobbes, Leviathan, ed. C.B. Macpherson (London: Pelican Books, 1968), 186.
[3]J.L. Talmon, The Origins of Totalitarian Democracy (Martin and Secker Warburg, 1952; reprint, Boulder: Westview Press, 1985).
[4]Ibid., 29-30.

Helvetius and Rousseau believed that man was the product of education and since, in the absence of the Church, education was to be implemented by the State,

> . . . ultimately man was nothing but the product of the laws of the State, and that there was nothing that a government was incapable of doing in the art of forming man.[1]

The pattern of social harmony, which they envisaged as being the same as the harmony of nature, could not be left to work itself out by itself. For the designs of nature to be realised deliberate arrangement is required.

> It is the task of the Legislator to bring about social harmony . . . to discover means of placing men under the necessity of being virtuous . . . of forcing him to be just to others. Since good laws alone make men virtuous, vice in society is the fault of the Legislator.[2]

In other words if there is a problem in society it is the fault of the government. This leads to the expectation that government can and therefore should solve the problem. The government in the name of helping the people to be free from poverty (or whatever), reduces them to being servants of the State. Talmon concludes after his theoretical analysis that,

> The greatest danger is in fact that far from denying freedom and rights to man, far from demanding sacrifice and surrender, this system solemnly re-affirms liberty, man's self-interest and rights. When a regime is by definition regarded as realising rights and freedoms, the citizen becomes deprived of any right to complain that he is being deprived of his rights and liberties.[3]

Rousseau's general will, which the Legislator would act upon and enforce, was ultimately like a mathematical truth or Platonic idea. It has an objective existence, whether perceived or not. It is, said Talmon, in the last resort a Cartesian truth.

This view was elaborated in great detail by the Utopian Socialists who followed. Charles Fourier (1772-1837) for example,

> . . . started out with the *a priori* idea that there must be a plan of God, that is to say, a certain social order conformable to God's will, and in such as may secure the perfect happiness of all mankind.[4]

The problem is merely one of discovering what this plan is. Influenced by Newton, Fourier assumes that the planetary and social worlds should correspond. The new association which he describes in great detail, the phalanstery,

> . . . is incapable of being produced in virtue of a spontaneous and necessary evolution, [so] it is necessary to discover and apply it.[1]

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[1]Ibid., 30-31.
[2]Ibid., 33.
[3]Ibid., 35.
[4]Charles Gide, introduction to <u>Design for Utopia: Selected Writings of Charles Fourier</u> (New York: Schocken Books, 1971), 17.

He determines the number and demographic character of people that should live there, the number of houses, dining rooms, shops, workshops, pay and jobs. He also envisages the creation of an industrial army to construct society.[2]

Robert Owen's vision of a "new moral world, a rational system of society founded on demonstrable facts" was, like Fourier's, also implemented, if somewhat more successfully. It was also a more radical vision of a social order in which there was no money. He suggested the wholesale redesigning of the laws of society:

> Until men shall understand how to make the laws, institutions, and arrangements by which future generations shall have their characters well formed, physically, mentally, morally, and practically . . . the human race cannot be made to enjoy happiness; and until the laws, institutions, and arrangements of man, shall be made in accordance with the now ascertained laws of human nature, it will be a vain hope to expect that man can be made happy.[3]

He elaborates in great detail how this society, in which there is no money, will be organised. In the past formation of society,

> . . . there has been no foresight or wisdom; no first principles understood and followed out consistently, to construct a system that could be explained and made beneficial for any portion of the human race . . . it would rather appear that plans had been devised, and measures purposely adopted, to render the attainment of these [sound] conditions not only difficult but utterly impossible, as long as those plans and measures shall be pursued.[4]

When Owen's vision is implemented then the present irrational chaos of society will be replaced by an order in keeping with human nature.

Those were just two illustrations of implemented utopias. Most however, including Thomas More's, were not designed to be implemented. Instead they were "to provide a fixed standard of judgement and to articulate an ideal in thought."[5] They were invariably static since change was regarded as being incompatible with perfection.[6]

This as Edward Shils has explained, is not unusual. "It has," he says, "long been thought that a good society is one without conflict."

> Rulers have almost always wished their realms to be free of conflict; they attempt to prevent or to suppress those who could initiate active conflict against them. . . . The ideal society is one in which there is no conflict—or at best, very little conflict. Conflict is generally regarded as something made necessary by ill-will, misfortune, injustice, undesirable scarcity, or historical inevitability. In contrast with this, a unified society, one in which conflict has been eliminated, is generally thought to be

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[1]Charles Fourier, Ibid., 19.
[2]Ibid., 179.
[3]Robert Owen, <u>The Book of the New Moral World</u>, 7 parts (London: The Home Colonization Society, 1842; reprint New York: Augustus Kelly, 1970), part 3, 76.
[4]Ibid., part 6, 54.
[5]Elizabeth Hansot, <u>Perfection and Progress: Two Modes of Utopian Thought</u> (Massachusetts: M.I.T. Press, 1974), 2.
[6]For further analysis of socialism see Appendix 3.

a good thing. Utopias are conflictless. The society without conflict, the highly
integrated society has not only been the reverently cultivated ideal. It has also been
the object of governmental policies.[1]

Even Marxism and other ideologies which recognize, and indeed utilize, social conflict still believe in the desirability and ultimate realisation of a conflictless society in the future. They believe in an end state towards which history is moving and in which there is equilibrium.

Later utopias were either designed to be implemented like Edward Bellamy's <u>Looking Backward</u>, in which case they included the possibility of change in the process of transition, or they tended to be of an anti-utopian genre, as people realised with dread and despair that it was technically possible to construct utopia. Nowhere was becoming Here.[2]

2. The consequences of imposed order

What then, are the consequences of following this program of imposing order? Although we have seen in the first chapter that this led to the Roman Empire becoming totalitarian, there are more recent illustrations. In the process of imposing order it is inevitable that the State grows, but along with that there is, according to Butler Shaffer, an increase in violence which of course stimulates a further growth of the State in a desperate attempt to re-impose order.

Shaffer proposed the very interesting and increasingly relevant thesis that "violence is a product of imposed order."[3] Based on the frustration-aggression hypothesis he proposed that,

> . . . the incidence of violence in our society may be, in part, a product of the
> frustration that people perceive in connection with their expectations of benefits to
> be derived from a formal system of law; that, in other words, people have
> sanctioned the political system out of a belief that the institution of law will produce
> a reasonable predictable level of social order, the failure of which to be realised
> results in frustration, which in turn serves to encourage aggression.[4]

This is extrapolated from the notion that any system of imposed order will serve to increase the tendency towards aggression and violence, to the degree people perceive its activities as frustrating their own legitimate expectations.

People naturally desire predictability, because "regularity is . . . a condition of personal security and the ability to plan our lives in fruitful ways."[5] Thus the more predictable an environment is, the more we are able to plan and engage in efficacious activity. We have to be able to predict consequences of activity. People want to be free from evil influences such as trespass, murder, theft, rape, assault etc. They want to be free to go about daily business without fear of disorder. Therefore orderly, human relationships are, says Shaffer "a basic metaphysical need." So as to bring about this state of affairs, the State is given a monopoly of coercive power for one legitimate function, what Shaffer calls its "hygienic function." This was described by Hobbes as its

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[1]Edward Shils, <u>The Constitution of Society</u> (Chicago: Chicago University Press, 1982), 3-4.
[2]Eugen Weber, "The Anti-Utopia of the Twentieth Century,"in <u>Utopia</u> ed. George Kateb (New York: Atherton Press, 1971), 82-84.
[3]Butler D. Shaffer, "Violence as a Product of Imposed Order," in <u>The Politicization of Society</u>, ed. Kenneth S. Templeton (Indianapolis: Liberty Press, 1979).
[4]Ibid., 450.
[5]Ibid., 463.

duty to provide order and security for the lives and property of its citizens. For Locke, government action was to be limited to protecting rights of man which he had in the State of nature. In setting up the Social Contract, the government was authorized to exercise those rights. However it has no authority to interfere with rights of nature, be it to limit them or even to extend them. Locke feared that the State would become a source rather than remedy for victimization and argued that it should be a neutral State, a night-watchman, eliminating and punishing acts of aggression. It was to keep men free from being victimized and free from having their will violated with respect to person or property. The sole purpose of State is to uphold the law, thereby protecting people from arbitrary interference so as to enable people to make the most of their life.

However as Locke feared, what Shaffer calls a "structuring function" has developed. This is because some men, also wanting regularity, try to get the advantage by gaining control of the State and use it to impose their own will on others. The State becomes politicized. The order which the State was originally mandated to preserve is changed as it becomes the playball of special interest groups: businessmen, educators, trade unions, manufacturers, environmentalists, farmers, trade guilds, etc. All have a vision of regularity and stability which they want imposed and maintained. Thus concludes Shaffer,

> . . . while the state continues to be presented to the public as a system of order designed to *protect* them from acts of victimization, in truth it functions as a mechanism for the ordering, regulation, and restriction of human conduct to the end of maintaining a "status quo" for the benefit of those who would stand to lose whatever advantage they presently enjoy were men permitted a greater degree of flexibility and opportunity for change in their economic an social relationships.[1]

The State essentially is interfering with the normal process of change and adaptation that would happen if there were no restrictions. It is trying to impose a static equilibrium on an essentially dynamic process. The order which it is now trying to maintain is to keep the market safe for those that have made it by shutting out, through regulations, those at the bottom so that there is no way for them to improve their lot through their own effort, and to possibly challenge those at the top. Businessmen are notoriously hostile to the free market, since it means that their market share can be challenged. By capturing the power of the State and implementing licensing restrictions, import controls etc. they maintain the status quo and keep the market safe and predictable.

There thus arises a conflict of purposes between the hygienic and the structuring functions of the State which has the potential for causing discontent:

> . . . the state becomes the <u>source</u> of the negative restraints upon human behaviour, functioning as the very <u>limitation</u> it was designed to eliminate.[2]

Frustrations which are perceived to be reasonable or nonarbitary, such as law enforcement, are accepted with much less overt aggression than those which are perceived to be arbitrary or unreasonable, such as zoning. Especially as the State fails to do its hygienic function, deterring and

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[1]Ibid., 459.
[2]Ibid., 461.

punishing law breakers, frustration grows and the State loses its legitimacy. Special interest groups argue of course that they are "protecting" the consumer or national security. For example, the licensing of trades and professions is necessary to keep out the incompetent; tariff barriers to protect jobs at home.

In preventing a person from ordering his environment in the way that he chooses though, the State creates a sense of powerlessness. It is perceived, and in fact is, interfering with legitimate goal-directed activity. This leads to a sense of frustration which can develop into aggression, which can be expressed as violence against presumed source of frustration. So instead of the government maintaining a free society, the result is,

> . . . the inability to achieve a sense of efficacy over one's life, due, in part, to the imposition of barriers and restrictions by the very institution that one was told would eliminate such negative influences.[1]

Examples of the structuring function of government which lead to frustration are:

a) Social reform measures such as minimum wage laws which are supposed to increase wages but actually lead to unemployment. They are promoted both by labour unions, to keep out lower priced sources of labour, and employers, to impose higher or equal wages on competitors. b) Urban renewal programs that salve the conscience of white liberals[2] but make the situation worse for blacks, but good for estate agents. c) Rent control laws that lead to a deterioration and shortage of rentable property, to solve which government builds public housing (slums). d) Building codes and zoning laws that make houses too expensive for ordinary people, but which are good for builders and those who already have a house.[3] e) Economic planning that is supposed to provide stability but which results in structural damage to the economy, followed by recession, unemployment, inflation, scarcity and surpluses of goods. f) Quotas for minorities in employment and education which create unfulfilled expectations and a deterioration in the minorities' position.[4] g) The police, who through preventing crime and protecting persons and property are supposed to be the epitome of the hygienic function of the State, but they do not and are often the source of crime and victimization themselves. The right to resist unlawful arrest was a fundamental principle of the English revolution. h) Welfare bureaucracies supposedly meant to serve the people but which regard their own welfare as paramount. The system takes on a life of its own and the people for whose benefit the organisation was created become instead a means to the organisation's own end. i) Economic controls where through taxation, the government takes away (legalised theft) peoples' money, and spends this money on what the taxpayer does not necessarily agree with. A cynic might say that politicians steal people's money and then spend it to try to buy their votes.

In all these cases, whenever the cure proves worse than the illness, more of the same is advocated as the solution. This leads to even greater control over peoples lives, and of course,

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[1] Ibid., 469.
[2] Shelby Steele, "White Guilt," The American Scholar 59 (Autumn 1990): 497-506.
[3] Alan W. Evans, "Town Planning and the Supply of Housing,"in The State of the Economy: 1992 (London: Institute of Economic Affairs, 1992), 81f. There was an interesting case in England in 1991 of a man who shot dead a planning officer who was trying to demolish a house that the man had built on his own property without planning permission.
[4] Thomas Sowell, Preferential Policies (New York: William Morrow, 1990).

greater frustration as people are prevented from fulfilling their legitimate aspirations by others who claim to know what is better for them.

Shaffer also makes the interesting observation that, as has happened recently, the frustration that develops through the imposition of "order" by a highly regulative political system may lead to an outbreak of aggression and violence not against the actual instigator, who is perceived to be too dangerous to attack, but against a scapegoat.

A true system of order as Shaffer notes, comes from within and is not imposed from without. Imposed order fosters disorder.[1] Or as Ortega y Gasset said,

> Order is not a pressure imposed upon society form without, but an equilibrium which is set up from within.[2]

The consequences of such a policy though is a State with an insatiable appetite for growth. As the public choice school of economists have pointed out, bureaucrats are no less self-interested than any one else and thus have their own agenda in which job security, prestige and growth of their bureau rate very high. The bureaucratic culture has its own values and priorities. It is particulary averse to risk-taking and always tries to maintain an equilibrium, the status quo. The only thing a social agency dreads is the solution of the problem it is supposed to be curing. There have been full-blooded civilizations in which the State has taken over completely and the ideals of the previously mentioned utopians actualized.

The Inca empire, although not European, is of interest because when it was discovered many people commented on its similarity to More's Utopia.[3] The Inca empire started from Cuzco and expanded through conquest and plunder. It imposed an organisational system so as to obtain land for food. In time and through a policy of resettlement and appropriation of land, the Incas became the ruling bureaucracy over 12 million people. Cuzco, and even more so Machu Pichu, the Inca mountain fortress, are examples of extraordinary feats of civil engineering. The houses and walls are famous for the size of the stones and the closeness with which they fitted. Only recently has the method of construction been discovered. The State itself was superbly organised. It was

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[1]And thus the Taoist wisdom;
> the more taboos in the world
> the poorer the people:
> the more sharp tools among the people
> the stupider the state.
> the more men's arts and skills,
> the more oddities arise:
> the more laws and edicts are proclaimed
> the more thieves and bandits there will be.
> hence the sage says
> if I do nothing, of themselves the people are transformed.
> if I love stillness, of themselves the people are correct.
> if I meddle in nothing, of themselves the people are rich.
> if I desire nothing, of themselves the people are unhewn.

The Taoist view was that if one imposes order by force it will only result in disorder: "ultimate Potency ceases to be shared, and our nature and destiny are frayed and smudged." Angus C. Graham, Disputers of the Tao: Philosophical Argument in Ancient China (La Salle, Ill: Open Court, 1989), 308.

[2]Ortega y Gasset, quoted in F.A. Hayek, The Constitution of Liberty (London: R.K.P., 1960), 148.

[3]C.S. Lewis in reviewing More's work commented: "There is nothing in the book on which the later More, the heretic-hunter, need have turned his back. There is no freedom of speech in Utopia. There is nothing liberal in Utopia. From it, as from all other imaginary states, liberty is more successfully banished than the real world, even at its worst, allows." Twentieth Century Interpretations of Utopia, ed. William Nelson (Eaglewood Cliffs: Prentice Hall, 1968).

hierarchical and the population was divided into decimal units governed by a *kuakas*, a lower level bureaucrat. The whole life of the citizenry was controlled by such officials who were responsible for raising work forces for the State. They issued regulation clothing, houses, furniture, controlled travel, implemented compulsory resettlement when necessary, oversaw distribution of food according to strict norms, determined marriage partners, were allotted single women as concubines and servants, and kept very detailed accounts of everything that happened in the State through public and secret investigations. There was no private property, money or trade. Private life was highly regulated, even as far as the prohibition of doors on houses, so that supervision could be more easily achieved. The state provided raw materials and took possession of finished products. It divided the life of a male peasant into decades, and specified what obligations should be fulfilled during that time. All this was enforced by a sophisticated system of punishments. Despite the sophisticated organisational capability the level of technology and education was very low.[1] In essence it was a system which had reached equilibrium. Order was imposed and maintained through fear. There was no opportunity for change or progress technologically or socially. It was completely static. Any creative innovations would be a threat to the whole carefully managed edifice. The population was kept to an optimal level by control of sexual life and child sacrifices. Despite Cuzco, the capital, having a population of 200,000 and tremendous organisational capability, the Inca empire collapsed to a small Spanish force. It was not capable of adapting to and meeting an unexpected challenge. The very desire to subject everything to control through detailed planning and regulation created a static social order which could not cope with and creatively respond to something out of the ordinary.

3. Bureaucracy

Bureaucratic organisation such as exhibited above has a function and is a very powerful way for people to achieve certain things. However it is an inappropriate model for the whole of society. Bureaucracy and profit management are compared incisively, if not polemically, by Ludwig von Mises.[2] The purpose, way of working and culture of the two are shown to be very different.

The goal of bureaucracy is to implement the detailed rules and regulations fixed by a superior body, and thus to execute the will of the supreme authority. In this its success cannot be checked by economic calculation, by profit and loss accounting. It only spends money. It does not earn it. The operating procedures are laid down clearly in the rules. Discretion is limited as much as possible, and innovation and creativity are not encouraged at all. It is the State that the bureaucrat represents. This is of course necessary. Mises is not critical of bureaucracy as such, since it is the proper way for government to function.[3] It would be far worse if each official had unlimited discretion and could thus govern in his own right. There would be an unlimited number of petty despots. To avoid this, bureaucratic procedures were developed in the first place.

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[1] The New Encyclopedia Britannica 1978 ed. s.v. "History of Andean Civilization."
[2] Ludwig von Mises, Bureaucracy (Yale University Press, 1944; reprint, Cedar Falls, Ia: Center For Futures Education, 1983).
[3] Ibid., 44.

Business on the other hand has a clear goal, the generation of profit. It is easy to measure the success or failure of a business by how profitable, if at all, it is. In the world of business, people in companies are given considerable discretion to find the most creative and best way to generate profit and minimise costs. Risk is encouraged and rewarded if successful. In this sense change in the free market comes from innovations on a small scale which happen at the bottom. If they are successful, they are adopted by others. If they fail, few people suffer. The consumer is sovereign because the producer has to satisfy him or her. If he does not, the consumer can look elsewhere for goods of better quality or lower price, or for more polite service.

Mises is very critical of the bureaucratization of spheres of society in which bureaucracy has no competence. In the bureaucratic management of public services, again profitability is not of prime importance. Providing a useful service is. However how does one decide how much money to spend on that service? Health and education for example could be, and are, bottomless in terms of resources that could be committed to them. Thus limits have to be set by political decision. The consumer is not the one who decides how much to spend but a politician is deciding for him in his (the politician's and the citizen's) best interest.

Bureaucratic management and interference in the private sector is even more debilitating. The success or failure of a business can come to depend on political favour or bribes, and not profitability and consumer satisfaction. When government interferes and regulates business through determining prices, incomes, employment practices, credit control, methods of production and import and export controls, exchange controls and targets, and endless paperwork, what happens is that initiative is paralysed and the bureaucratic mentality is fostered. This is what happened in the German *Zwangswirtschaft*. Enterprise becomes throttled as the corporatist state grows.

A bureaucracy is essentially a static method of administration. There are clear rules and procedures for dealing with every problem or case that comes before it for consideration. The bureaucratic mind cannot comprehend the dynamic of civil society, and especially the market place. To the bureaucrat everything seems to be chaos. Self-regulation and spontaneous order seem to be a contradictions in terms. The bureaucratic mind naturally wants to bring the market under the rational control of the State, the State which can see what is best for the whole of society unlike the self-interested businessmen. It strives to recreate society on just principles, redistributing wealth from the rich to the poor. It represents the commonweal of justice, civilization and superior wisdom against selfish individuals. It, *der Staat*, is God.

> Let us not question the sincerity of the well-intentioned officeholder. He is fully imbued with the idea that it is his sacred duty to fight for his idol against the selfishness of the populace. He is, in his opinion, the champion of the eternal divine law. He does not feel himself *morally* bound by the human laws which the defenders of individualism have written into the statutes. The written laws are in the eyes of the officials barriers erected for the protection of scoundrels against the fair claims of society. Why should a criminal evade punishment only because the "State" in prosecuting him has violated some frivolous formalities? . . . What is the use of all these restrictions imposed by written law upon the government official's honest attempt to make the people happy? If only there were no constitutions, bills

of rights, laws, parliaments and courts! No newspapers and no attorneys! How fine the world would be if the "State" were free to cure all ills![1]

Such an outlook is not merely the product of Mises' and Max Weber's Cassandra-like imagination. I quote below some excerpts from the Handbook on the Study of Social Problems. Leon Mayhew, a sociologist at the University of California has written that,

> One of the primary premises of modern liberal ideology asserts that social problems can be solved through rational systematic planning. Another premise declares that planned attacks on social problems can succeed in a democratic setting and within the limits of the rule of law . . . [however] . . . there may be some tension between the two ideas. We must at least face the possibility that the dynamic implications of the concept of planning contradict the inertia inherent in legal institutions. . . . The solution of a social problem implies that people start or stop doing things, that they cease engaging in conduct that is supported by deeply rooted political and personal interests. It follows that successful planning implies social control. In liberal social thought, social control refers to the insulation or neutralisation of those private interests that would, if permitted unbridled expression, disrupt or obstruct collective ends. . . . Social control can be said to operate within the rule of law when binding rules are stated in formal laws and punitive sanctions can be used to support these laws only after invoking duly constituted legal procedure. . . Law, by building in a possibility for defense, builds in the possibility of evasion. If the obstacles to a program of change stem from the interests of a given social group, then one means of effecting change is to liquidate the group . . . Law is a system of norms that define rights, privileges, and duties for the participants in the legal system. These unchanged norms bestow a vast body of rights and privileges that provide many opportunities for evasion and can even be mobilized on behalf of systematic resistance to new laws.[2]

This liberal mind has informed much of the social legislation of the past century. It is based on the assumption that it is possible for government to solve problems because it is the most powerful institution in society. However there is no necessary link between power, knowledge and competence. In fact as we shall see, the power of the state is actually extremely limited because the knowledge required to carry out the liberal program does not exist.

4. Hayek's analysis of constructivist rationalism

Friedrich Hayek has laboriously traced and compared the history of two different views of the world towards freedom, law, morality, the state and order. One he calls the Anglican view because it developed in Britain, the other the Gallican because it developed in France. From the former developed liberal democracy, and from the latter totalitarian democracy.[3]

Constructivist rationalism, as Hayek calls the second view, finds its modern origin in the rationalism of René Descartes. The rationalist tradition rejected anything which did not conform to the canons of reason. This led to a complete contempt for tradition, opinion, custom and history.

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[1]Ibid., 75.
[2]Leon H. Mayhew, "Social Planning, Social Control, and the Law," in Handbook on the Study of Social Problems, ed. Erwin O. Smigel (Chicago: Rand McNally, 1971), 479-80.
[3]This is almost identical to the distinction drawn in Unificationism between Abel-type democracy and Cain-type democracy. Divine Principle (New York: H.S.A.U.W.C., 1977), 466-68.

Everything was to be judged by reason.[1] He and his intellectual descendants, the *philosophes*, Rousseau, Voltaire, Bentham and ultimately, Hegel and Marx, thought that through the power of reason it would be possible to reconstruct society anew on a scientific basis. Hayek regards this as a relapse back into a primitive, anthropomorphic way of thinking.

> It produced a renewed propensity to ascribe the origin of all institutions of culture to invention or design. Morals, religion and law, language and writing, money and the market, were thought of as having been deliberately constructed by somebody, or at least owing whatever perfection they possessed to such design.[2]

This view holds that human institutions only serve human purposes if they have been deliberately designed for that purpose. It cannot conceive of any order which is not the product of deliberate design. Everything must have been constructed by someone. Therefore it can just as easily be reconstructed. This anthropomorphism, or even animism, is also shown by the personification of society. Society is described as 'acting', 'rewarding' certain groups, 'guilty' of certain crimes, or merely 'just' or 'unjust'. Society is reified and treated as if it were a conscious, acting person, that can be held responsible for certain acts. This is a very deeply rooted and prevalent conceptual confusion.

Hayek also traces the error to Cartesian dualism, the conception that there is an independently existing mind stuff created by God whose essentially property is thinking. It is of a different substance to matter whose essentially property is that it is extended. Descartes' contention was that the only clear and distinct ideas we have are innate and that by inspecting one truth, "*cogito, ergo sum,*" we can reason to all truths. From this developed the whole rationalist enterprise of drawing up plans to reconstruct society on rational grounds. One only has to think of Saint Simon, Owen, Fourier, Edward Bellamy, to see how influential this thesis has been. At the same time everything was subjected to reason, and anything not proven by reason was dismissed as superstition. Hayek however argues that,

> Mind is as much a product of the social environment in which it has grown up and which it has not made as something that has in turn acted upon and altered these institutions.[3]

The Cartesian view was also highly dismissive of traditional morals. Baruch Spinoza, although a devout mystic, still maintained that, "he is a free man who lives according to the dictates of reason alone." However, the religiosity of both Descartes and Spinoza was soon lost to their intellectual heirs like Voltaire: "*Voulez-vous avoir de bonnes lois? Brulez les vôtres et faites nouvelles.*" This attitude became still more radicalised in the following century with attitudes such as that of Alexander Herzen: "You want a book of rules, while I think that when one reaches a

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[1] In this Descartes is continuing the Socratic enterprise of appealing to reason as the judge and guide of all activity. At least Socrates though, realised that recognition of one's ignorance is the outcome of such a pursuit. The Old Testament prophets by contrast appealed to tradition, to the old law as authority.
[2] Hayek, Rules and Order, 10.
[3] Hayek, Rules and Order, 17.

certain age one ought to be ashamed of having to use one [because] the truly free man creates his own morality." And finally in this century, the notorious statement by John Maynard Keynes:

> "We entirely repudiated a personal liability on us to obey general rules. We claimed the right to judge every individual case on its merits, and the wisdom, experience, and self-control to do so successfully. We repudiated entirely customary morals, conventions and traditional wisdom.[1]

And yet, as Hume said, "the rules of morality are not the conclusions of our reason." Rules and taboos about sexuality, honesty, and property rights were not deduced from axioms by our primitive ancestors. They preceded the development of reason, have become prevalent because those societies that practised them were relatively successful and have been passed on through custom.

Even scientists like Einstein were tempted by the power of reason and regarded it as obvious that,

> . . . human reason must be capable of finding a method of distribution which would work as effectively as that of production.[2]

Hayek criticises this rationalistic approach for ultimately leading to irrationalism. This is because naive rationalism cannot accept anything which cannot be defended by argument. It cannot accept that the existence of an abstract order which was not the result of rational design.

Constructivist rationalism, though false, appealed to man's vanity because it gives a sense of unlimited power to realise his wishes. But in doing so limits what man can actually do. This Hayek called the fatal conceit, the idea that, "man is able to shape the world around him according to his wishes."[3] Hayek sought the root of this outlook in the deeply ingrained propensity of primitive thought to interpret all regularity in phenomena anthropologically and as the result of a designing mind. Hayek found the following four presuppositions at the root of such constructivist rationalism:

> 1) The idea that it is unreasonable to follow what one cannot justify scientifically or prove observationally (Monad, Born).
> 2) The idea that it is unreasonable to follow what one does not understand . . .
> 3) The related idea that it is unreasonable to follow a particular course unless its *purpose* is fully specified in advance (Einstein, Russell, Keynes).
> 4) The idea . . . that it is unreasonable to do anything unless its *effects* are not only fully known in advance but also fully observable and seen to be beneficial (the utilitarians).[4]

None of the above show any awareness that there might be limits to our knowledge, something which it is incumbent on science to discover. Since, as we shall see, there are very severe

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[1]All quoted from Hayek, Ibid., 25-26.
[2]Quoted in Hayek, The Fatal Conceit: The Errors of Socialism (Chicago: University of Chicago Press, 1988), 59.
[3]Hayek, Ibid.
[4]Ibid., 59-60.

restrictions on our knowledge, what cannot be known cannot be planned. The attempt at planning restricts the level and extent of success to the mind of the one who plans.

The emotional roots and appeal of constructivist rationalism, Hayek locates in,

> . . . the desire for a visible common purpose which is our inheritance from the tribal society and which we still find breaking through everywhere.[1]

One of the reasons is the revival of organisational thinking due to the growth of large organisations and the numbers of people working in them. People forget that society, "the orderly structure of actions resulting from the observation of certain abstract rules by its members,"[2] depends on ordering forces of a very different kind to that of an organisation. Organisations are based on a command structure and rules of organisation, society, on the following of abstract rules of just conduct. This difference is no longer recognized clearly so that people think that the success of deliberately created purposive organisations and their accompanying rules can be expanded to the whole of society. Indeed it is incumbent on modern man to create a rationally ordered society instead of one which has no purpose.

But Hayek thinks the greatest discovery mankind ever made was of the possibility of men,

> . . . living together in peace and to their mutual advantage without having to agree on common concrete aims, and bound only by abstract rules of conduct.[3]

This makes possible what Hayek calls the Great Society (not to be confused with Johnson's version) in which each is allowed to use his own knowledge for his own purposes within the framework of known general abstract rules of just conduct. In a tribal society the basis for internal peace is that all members be devoted to common visible purposes. This means that someone has to decide what at any given moment these purposes should be. Someone gives the orders and others obey them. The tribal society is thus close and intimate and instinctual. Its relationships are based on affection, and as such are an extension of the family. Relationships in the Great Society however are based on following abstract rules which may not lead to our immediate self-gain. This requires considerable discipline and does not come naturally. To this extent we have been civilized very much against our wishes and natural inclinations.[4]

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[1] F.A. Hayek, Law, Legislation and Liberty, vol.2, The Mirage of Social Justice, 134.
[2] Ibid., 95.
[3] Ibid., 136.
[4] F.A. Hayek, "The Three Sources of Human Values," in Law, Legislation and Liberty, 168.

CHAPTER 3

THE RETURN OF CHAOS

The Greeks as we saw, tried to banish, or at least explain away, the chaos which is so apparent in the world of the senses. However despite their attempts, chaos has reared its ugly, or maybe beautiful, head at the very heart of the rationalistic enterprise. This has brought a new challenge to reductionism since if some phenomena are chaotic, long-term predictions become intrinsically impossible be they of the weather or the economy. It also means that a system cannot be understood by breaking it down and examining the pieces. A holistic approach is necessary to provide a complete description and explanation of reality. In this chapter we shall examine the different disciplines where chaos has appeared again and the theory of chaos that has developed.

I. Mathematics

Mathematics has long been the paradigm of rationality. The Pythagoreans thought they could explain all reality with numbers and indeed the fact of the "unreasonable effectiveness of mathematics in the natural sciences"[1] remains something to be wondered at. However the discovery of irrational numbers by Hippasus destroyed the belief, on which the whole of Pythagoreanism had been based, that everything could be expressed in integers. Hippasus also played an important part in political disturbances in the Pythagorean order, and legend has it that he was punished by the gods for having made public his terrible secret.[2] It is now clear that in fact most numbers are infinitely complex, unspecifiable, unpredictable and incalculable. π for example, which occurs in many equations never repeats itself even though it has been calculated to 60,000 places.

Nevertheless, the quest for mathematical certainty and a firm basis for mathematics never ceased, and some of the greatest steps since the Greeks were made in the late nineteenth century by Husserl, Frege, Russell and Whitehead. But this quest was shown in the 1930's to be a chimera by Kurt Gödel. His theorem demonstrated that

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[1]Eugene P. Wigner, "The Unreasonable Effectiveness of Mathematics in the Natural Sciences," in Symmetries and Reflections (Woodbridge, Cn.: Woodbridge, 1979), 222.
[2]Kurt von Fritz, "The Discovery of Incommensurability by Hippasus of Metapontium," in Studies in Presocratic Philosophy, vol. 1, The Beginnings of Philosophy, eds. D.J. Furley and R.E. Allen (New York: New Humanities Press, 1970), 407.

> . . . if arithmetic is consistent its consistency cannot be established by any meta-mathematical reasoning that can be represented within the formalism of arithmetic![1]

and furthermore,

> . . . the resources of the human intellect have not been, and cannot be, fully formalised, and that new principles of demonstration forever await invention and discovery.[2]

In other words, the consistency of a formal system of arithmetic cannot be proved within the laws of arithmetic alone. There always exist true statements which cannot be proved, and so there always have to be criteria for evaluation or reference points outside the system. But these cannot be shown to be consistent either without leading to an infinite regress. This means that it is impossible to prove the consistency of arithmetic. This shocked the scientific world since modern science is founded on the rules of arithmetic. This has recently been extended by Gregory Chaitin, who has even shown that there is randomness in the branch of pure mathematics known as number theory:

> Randomness, uncertainty and unpredictability occur even in the elementary branches of number theory that deal with diophantine equations.[3]

Equally shocking was the discovery of chaos in simple deterministic algorithms such as that used to plot population growth, $x_{y+1}=ax_y(1-x_y)$. When a=4, the changes in x are chaotic and completely random.

However this randomness is "directed" such that:

> . . . there is a contained randomness about the behaviour of chaotic systems. They do not wander all over the place, but their motions home in on the continual and haphazard exploration of a limited range of possibilities (called a *strange attractor*).[4]

Interestingly enough bird and insect populations often fluctuate randomly from year to year in the same way.[5] The reason for the effect is the non-linear magnification of tiny fluctuations. Thus,

> . . . unless one knows the initial conditions with *unlimited* accuracy, one can only project their behaviour a small way into the future with any confidence. Beyond that, they are intrinsically unpredictable.[6]

The problem is that it is intrinsically impossible to have such knowledge, something understood in economics for a long time.

II. Physics

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[1] Ernest Nagel and James R. Newman, <u>Gödel's Proof</u> (New York: New York University Press, 1958), 96.
[2] Ibid., 101.
[3] Gregory J. Chaitin, "Randomness in Arithmetic," <u>Scientific American</u> 259 (July 1988): 84.
[4] John C. Polkinghorne, "The Nature of Physical Reality," <u>Zygon</u> 26 (June 1991): 224.
[5] Davies, <u>Cosmic Blueprint</u>, 42.
[6] Ibid.

A. Thermodynamics

In the nineteenth century a great paradigm shift occurred with the formulation of the theory of thermodynamics. Classical science used mechanics as its model. But in mechanics there is no time, machines are reversible, and everything is perfectly predictable. From our everyday experience however, we know that there is unidirectional change. Some things happen which are irreversible. Rivers don't run uphill, eggs don't unbreak, and we don't become younger. Over time smoke becomes evenly dispersed. You can tell that a film is being run backwards if the smoke reconstitutes itself and goes back down the chimney. When the motion of smoke particles is viewed under a microscope, it is clearly seen to be random (Brownian motion).

Einstein developed the theory of Brownian motion on which the laws of thermodynamics came to be based. The kinetic theory of gases took a macroscopic view of whole populations of particles. Brownian motion also showed that the second law of thermodynamics is not absolutely true. Firstly the state of completely uniform temperature presupposed by the second law is never satisfied in nature. There is always flux and motion. Secondly, there is always the possibility that a fluctuation will bring about a highly ordered macrostate. Statements could be made in terms of pressure and temperature which represent the average effects of movements of a large number of particles. However nothing definite could ever be said about any specific particle since its movement was purely random and unpredictable. All that can be stated about the location of a particular particle is its probability of being there.

Also, heat flows from a hot to a cold body until both are at the same temperature, at equilibrium. While there is a differential it is possible for work to be done. The second law of thermodynamics (formulated in 1850), states that in a closed system entropy never decreases. The second law introduced an arrow of time into physics. Since in a closed system entropy never decreases, there is an irreversible movement from order to disorder. This arrow of time also points to the heat death of the universe though, to which as we saw, the appropriate philosophical response Bertrand Russell said was, "unyielding despair." But with this teleology was reintroduced into physics since whatever the initial starting conditions, the system will finally reach the state determined by the boundary conditions.[1]

Thus the classical view of physics is static and determined by the past, whereas the behaviour of particles in thermodynamics is random but is moving towards thermal equilibrium, determined by the future. As Davies says,

> A deep paradox lies at the heart of classical physics. On the one hand the laws of physics are deterministic. On the other hand we are surrounded by processes that are apparently random.[2]

Ludwig Boltzmann was able to bridge the gap between the two through the application of probability theory. His ordering principle, which applies to equilibrium systems, stipulates that there is irreversible evolution toward equilibrium. But even so it was not possible to give a

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[1]Prigogine, 139.
[2]Davies, <u>Cosmic Blueprint</u>, 31.

complete explanation of reality. In particular it cannot adequately explain the other arrow that can be discerned, pointing to progress, the growth of complexity in the universe.

B. Quantum mechanics

Just when the nineteenth century edifice of classical physics was almost complete, bar a few loose ends, Pandora's Box was opened again by Einstein's theory of relativity and the quantum mechanics of Bohr, Schrödinger, Heisenberg and Dirac. It led to a schism in physics between idealism and realism.

Niels Bohr's celebrated Copenhagen Interpretation of quantum mechanics was disputed by Einstein, Plank, Schrödinger, de Broglie and others. Yet it became the mainstream view, largely, says Oxford physicist Peter Hodgson because,

> . . . a positivist philosophical climate . . . encouraged scientists to equate the real with the measurable.[1]

In Bohr's view physics was concerned with the relations between measurable observables. The wave function of a system contains all the information about that system. Thus when used to explain radioactive decay it concludes that there is no known way to predict the instant of decay of a particular nucleus. What can be established is the half-life of an element. Because the Copenhagen thesis is that all the nuclei are identical and all the information is contained in the wave function, only the probability of a nucleus decaying can be known. Light cane be explained as being either waves or particles. However these two explanations are incompatible and one cannot be reduced to the other. This became the theory of Complementarity, whereby there are two exclusive ways of understanding the same system.

Heisenberg's Uncertainty Principle showed that it was impossible to accurately determine both the position and momentum of a particle. It is possible to measure the position or the momentum but not both. This has been taken to mean that particles do not have a definite position and momentum, and therefore that indeterminism is at the heart of matter. Heisenberg himself thought that his thesis undermined causality:

> . . . since all experiments are subjected to the laws of quantum mechanics and thereby to the equation $\Delta x \, \Delta p > h$ the invalidity of the law of causality is definitely proved by quantum mechanics.[2]

This would be true, if as Bohr and others argued, quantum mechanics was a complete theory. However, as Heisenberg said, "what we observe is not nature itself but nature exposed to our method of questioning." This does not mean that there is no real world beyond the end of a measuring instrument. What he had noticed is a commonplace in the social sciences. When an anthropologist studies a society, he and his study alter the society. But still he believes the society has a reality independent of his observing it. Or as Margret Thatcher said about the proposed televising of the House of Commons, "This House will never be televised," as the introduction of

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[1]Peter E. Hodgson, "Implications of Quantum Physics II," The Month 17 (September 1984): 296.
[2]Quoted in Hodgson, 296.

cameras themselves would alter the way M.P's behaved. At the same time it is important to clarify the sense in which we talk about indeterminism. Indeterminism could be a consequence of the measuring process, making a quantum system behave unpredictably, it may be just a consequence of human ignorance, or it may be a fundamental property of nature.

However the phenomena of the spontaneous and random creation of matter in an intense electric field is a greater challenge to causality.[1] The creation of particles here is not caused in the Newtonian sense by anything else. A similar effect is observed in a vacuum. The law of the conservation of energy can be suspended momentarily at a quantum level so that,

> . . . particles are permitted to pop out of nowhere, enjoying a fleeting existence, before fading away again into oblivion. This evanescent activity cannot be prevented. Though space can be made as empty as it can possibly be, there will always be a host of these temporary particles.[2]

A further implication of quantum mechanics is the apparent dependency of the world on an observer as shown through the paradoxical Schrödinger's cat thought experiment. This is Bishop Berkeley revisited with a vengeance. Bohr's world becomes very idealistic as independent reality disappears. Arthur Eddington and James Jeans, two leading physicists, even went so far as to propose the "stuff of the world was mind-stuff".[3]

However, arguing for a real world, Einstein tried to prove that quantum mechanics was an incomplete account since he could not accept that, "God played with dice." Others too, such as David Bohm, have wanted to save determinism and thus causality by postulating the existence of "hidden variables," which cause the average behaviour of large numbers of systems to be regular.[4] Although they are out of favour with the scientific community, such views are consistent with present knowledge and have not been disproved.

The Copenhagen interpretation was verified by the discovery of non-locality in the 1982 experiments of Alain Aspect to test the Einstein-Podolsky-Rosen paradox devised to prove that quantum physics was incomplete. A pair of widely separated (26 metres) photons interacted with each other instantaneously when an attempt was made to measure their momentums simultaneously. Either there was a faster-than-light signalling mechanism, or somehow the photons were interconnected. There is a counter-intuitive togetherness-in-separation. This has been taken to imply a holistic aspect of reality as well as showing that,

> . . . naive reality—the reality of particles really possessing well-defined qualities in the absence of observation—cannot be sustained.[5]

Not only have the foundations of matter been shown to be chaotic at some deep micro level, so too has the paragon of Newtonian macro-mechanics, the pendulum been shown to act randomly under certain conditions.[1]

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[1]Paul Davies, <u>Superforce: The Search for a Grand Unified Theory</u> (New York: Simon & Schuster, 1984), 201.
[2]Ibid., 105.
[3]David Foster, <u>The Philosophical Scientists</u> (New York: Dorset Press, 1985), 8-11.
[4]David Bohm, "Hidden Variables and the Implicate Order," <u>Zygon</u> 20 (June 1985: 111-124.
[5]Davies, 46.

A less surprising discovery, to the layman at least, was the demonstration by Edward Lorenz in 1963 that the equations used to describe the atmosphere, and hence to attempt to predict the weather, are also chaotic and essentially unpredictable, since even the minutest disturbance can be magnified out of all proportion. This is known as the Butterfly Effect, since it is theoretically possible that a butterfly stirring today in Peking can transform storm systems in New York next month. This was surprising, since it had always been assumed that the atmosphere obeyed the laws of physics, and that an accurate mathematical model ought to be possible, if only sufficient input data is available. However, it is in fact inherently impossible to accurately predict the weather more than three days away.

A further illustration of the sensitivity of some physical systems to external influences is surprisingly taken from a game of billiards:

> Imagine a game of billiards, somewhat idealised so that the balls move across the table and collide with a negligible loss of energy. With a single shot the billiard player sends the collection of balls into a protracted sequence of collisions. The player naturally wants to know the effects of the shot. For how long could a player with a perfect control over his or her stroke predict the cue ball's trajectory? If the player ignored an effect even as minuscule as the gravitational attraction of an electron at the edge of the galaxy, the prediction would become wrong after one minute![2]

One of the properties of chaos is that any effect, no matter how small, can quickly reach macroscopic proportions. Chaotic systems also generate randomness on their own. There is no need for random external inputs.[3] There are of course, an infinite number of such micro fluctuations. The conclusion Paul Davies comes to is that,

> . . . in reality our universe is not a linear Newtonian mechanical system; it is a chaotic system. If the laws of mechanics are the only organizing principles shaping matter and energy then its future is unknown and in principle unknowable.[4]

III. Economics

The catastrophic failure of planning under socialism is at last becoming clear to all. Whereas many people recognize that in part the failure was due to the absence of the disciplines of the market, and the bureaucratization of society, there is a more profound reason. Planning is impossible for epistemological reasons, as has been pointed out and developed by the Austrian school of economics.

A. Ludwig von Mises

Ludwig von Mises (1881-1973) initiated this devastating critique of socialist economics based on the impossibility of calculation in a socialist economy.[5] The advantage of the free market

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[1]Davies, Cosmic Blueprint, 51.
[2]James P. Crutchfield and others, "Chaos," Scientific American 255 (December 1986): 49.
[3]Ibid., 53.
[4]Davies, Cosmic Blueprint, 56.
[5]Ludwig von Mises, "Economic Calculation in the Socialist Commonwealth," Collectivist Economic Planning, ed. F.A. Hayek (London: George Routledge, 1935). For a thorough critique of every aspect and form of socialism see, Ludwig von Mises, Socialism (Indianapolis: Liberty Press, 1981).

is that it enables economic calculations to be made so that scarce resources are not squandered. There are limitless ways of doing different things with natural resources, labour and capital. The problem is in deciding what is the best and most advantageous—which should be implemented because it is urgent, and which postponed or discarded. In the free market these decisions are made based on market prices.

In a modern economy there are billions of market exchanges between the producers, distributers and consumers. There are thus also billions of prices which each represent the value of a commodity to the person buying or selling it. These prices will typically be subject to constant change. The structure of the relative prices will be in a state of constant change because resources and preferences are not static. When demand is low and supply high, the price will fall as sellers try to find buyers, persuading them into the market with low prices. People who would not buy that commodity at the higher price may now do so. Conversely when demand is high and supply low, the price will go up to reflect this. Thus people for whom the good is of marginal value will drop out of the market, leaving the goods for those who have greater desire and are prepared to pay. Thus the relationship between supply and demand is harmonized.

Thus in the production of any consumer good, producers need the guidance provided by the prices of many capital goods. From these they can calculate which project is most economical and fruitful. The bottom line is whether the item or service can be provided at a profit. If it cannot, this means that there are not enough people who value the good or service sufficiently to pay that price. In that case it is better to switch resources elsewhere. Ultimately it is the consumer who decides whether a particular business enterprise should continue to exist. It is his or her value judgement as to whether something is or is not worth the price being asked. Such a judgement is necessarily subjective in nature. There are no objective Platonic absolute values. Something is worth what someone is prepared to pay for it. This of course is very subjective and depends on that person's perceived needs, circumstances, resources, values, and priorities. Considerations for investment of precious capital, human as well as material and financial, are made with the important criteria of whether or not the enterprise is likely to be successful or profitable. It will be so if sufficient number of people subjectively value what is being offered, and reward the entrepreneur with profit. Prices therefore provide valuable information about the state of the market, about supply and demand, about scarcity and abundance. These prices are determined not by some great accountant or economist, but through the market, the give and take of buying and selling.

In a planned economy on the contrary, there is no market. Prices, interest rates, wages, production quotas and methods are decided by a Planning Board. However it is also the case that it is impossible under this system to make any economical calculation, because there are no real prices. It is impossible to make a rational evaluation of different proposals or ways of production. Hence to calculate the price of a commodity Marx developed his ludicrous labour theory of value in an attempt to determine the objective value of a good. Decisions as to investment would have to be made by different criteria, such as what is in the national interest. Administrators and officials have to decide what something is worth. However, because the price is not determined by the market, some things are overpriced and some underpriced. Of some there are too few and of others

too many. Many production methods are very inefficient, but this cannot be evaluated properly. The socialist economy has to look to prices in the capitalist countries so as to make some approximation to rational pricing. Thus paradoxically, socialism ultimately requires capitalism for its own survival! Despite claiming to be scientific, really, "Socialism is the abolition of rational economy."[1]

For example, how much of any particular commodity to produce, say a washing machine, has to be decided by a central plan. To make this commodity it is necessary to calculate how many factories are required, how many workers, how much raw material. The same has to be done with the suppliers of raw materials and any service industries. So too with the houses for the workers and the schools and shops for the families. Into this has to be included the building of these houses, shops, roads whose own construction will affect the plan for the number of bricks and cement, wood and nails, tarmac and bulldozers. These figures of course, will feed back into the plan for the construction industry and suppliers of raw materials. All the producers have to be given goals of the number of products to produce.[2] One could develop the web or network of complex relationships and their feedback *ad infinitum*.[3] The result would be a calculational nightmare. Part of the problem is trying to plan for numbers of children that families will have, the sizes of feet of the whole population so that the right number of size 6's and 7's will be produced. Trying to second-guess fashion and the preferences people have is difficult, as is trying to compute how much shoe leather will be worn. It is clearly a nightmare. Still, there are some socialists who think it is possible to create a rational planned economy with the advent of modern computers.

Hayek deepened Mises critique of socialism by showing that it is not merely a calculational problem, but that no one has the knowledge required to make the necessary calculations even if they were possible. For Hayek the role of the market is primarily epistemic, in that it is a device for transmitting and generating information that is otherwise distributed throughout society. Knowledge of the economy is mainly local knowledge of fleeting economic environments. It is often embodied in skills or in entrepreneurial insight, a sensitivity for *kairós*, the propitious, non-recurring moment for action.[4] Little of it is propositional or factual. The price mechanism is thus the way that information is communicated. To know that there is a shortage of a particular good, one does not have to know the whole circumstance of the industry, its suppliers, and labour problems. One has only to look at the price. The price mechanism is extremely sensitive to all the factors affecting the economy. Price is thus knowledge. It reflects any fluctuations in the economy caused by information that cannot be centralised. Any attempt to collect and process this information by a central planning board will in fact distort and suppress the price mechanism, and thus will squander that very precious resource, human knowledge. This knowledge is thus not the property of any single person. It is a holistic knowledge of the whole society. It represents the essence of what is taking place in the market. Thus it is not that planning is impossible, since

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[1]Ibid., 110.
[2]At one period in the Soviet economy the plan was couched in terms of tons of steel to be consumed. Thus a factory which manufactured tractors would be given a goal in tons and not numbers of tractors to be made. The resourceful workers made the tractors heavier to fulfil the goal.
[3]See Stuart Kauffman's work on networks below.
[4]Radnitzky, 170.

socialist countries do attempt it, but doing so is extremely wasteful and uneconomic as the knowledge that could be derived from the price mechanism is squandered. Thus,

> . . . [the] demand [for] a deliberate arrangement of human interaction by central authority based on collective command over available resources is [based on] a factual error . . . about how knowledge of these resources is and can be generated and utilised.[1]

B. Michael Polanyi

The polymath Michael Polanyi furthered the epistemological critique of socialism through his understanding of knowledge. All knowledge, he says, is *tacit* knowledge or at least rooted in tacit knowledge. There is no such thing as knowledge which is wholly explicit.[2] For example when we are aware of the knowledge of driving a car (A) while driving the car (B), our awareness of (A) is a *subsidiary awareness*. It is (B) which is the *focal* point of our attention. While we are focusing on the driving itself (B), the knowledge (A) may be unidentifiable. The driving itself gives the meaning to the knowledge of driving. When we switch our attention to (A) it loses its previous meaning. This Polanyi say is the structure of tacit knowing. He also distinguishes between tacit and explicit knowledge. A driving manual is an example of explicit knowledge (though of course it is rooted in the tacit knowledge of the author who can drive). Memorizing the manual does not mean one has learnt how to drive. It is only when one actually drives that the knowledge which was explicit becomes increasingly effective as it sinks into a tacit matrix. Tacit knowledge is therefore more fundamental than explicit knowledge. The meaning of language for example is a tacit knowledge. We can never exhaustively state the rules of grammar and the meanings of our vocabulary. The use of one's body in speaking, or indeed in doing anything, is a tacit knowledge of which we have only a subsidiary awareness. A skilful performance is achieved by following rules which are not necessarily known to the person following them. For example, when riding a bicycle, if one tried to keep one's balance by adjusting the curvature of the bicycle's path in proportion to the ratio of the unbalance over the square of the speed, one would probably fall off. Thus,

> . . . *we can know more than we can tell and we can tell nothing without relying on our awareness of things we may not be able to tell.*[3]

Hayek made a similar point in his analysis of man as a rule-following being. He argued that if we are not to end up in an infinite regress, the supra-conscious mechanism which operates on consciousness cannot itself be conscious and therefore,

> . . . there will always be some rules governing the mind which that mind in its then prevailing state cannot communicate, and that, if it ever were to acquire the capacity of communicating these rules, this would presuppose that it had acquired further higher rules which make the communication of the former possible but which themselves will still be incommunicable.[4]

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[1]F.A. Hayek, <u>The Fatal Conceit</u>, 7.
[2]Michael Polanyi, "The Logic of Tacit Inference," <u>Knowing and Being</u> (Chicago: University of Chicago Press, 1969), 144.
[3]Michael Polanyi, <u>Personal Knowledge</u> (New York: Harper Torchbooks, 1964), x.
[4]F.A. Hayek, <u>Order With or Without Design?: Selections from F.A. Hayek's Contribution to the Theory and Application of</u>

Polanyi went further still when he argued that the complete objectivity usually attributed to the exact sciences is a delusion. In every act of knowing there is the tacit contribution of the person knowing what is being known. Thus all knowledge is personal knowledge, the fusion of the objective and the personal. But this does not mean that everything is purely subjective if one is passionately committed to the truth.

As applied to the economic sphere, Polanyi's thesis attacks the notion that there can be objective knowledge upon which to base economic planning. Most knowledge is tacit, practical, local, implicit, inchoate, traditional knowledge embodied in skills, intuitions, relationships, hunches, flairs and dispositions, which can never be formulated explicitly or articulated in a way that would be of any scientific value. Theoretical knowledge is just the visible tip. Thus the market is valuable because it is a device for,

> . . . the transmission and utilization of unarticulated, and sometimes inarticulable, tacit and local knowledge.[1]

Therefore, like long range weather forecasts, computer projections of the economy can never be successful, because most of the knowledge is inarticulable and not accessible. It only exists in use. So the project to design and plan the social and economic order on a rational, logical basis is impossible because the required knowledge does not exist in the public sphere.

C. G.L.S. Shackle

The next step in the epistemological critique of socialist planning was that of G.L.S. Shackle.[2] He argued that planning was impossible, not because the knowledge was inaccessible, but because the knowledge planners would need to plan successfully did not exist. The future is unknowable in every detail. We make a guess, or extrapolate and make predictions, but there are always singularities and novelties which defy being incorporated into a plan. Such changes may be wrought by war, political upheaval, the weather, panics, fashion and people's subjective unpredictable whims, fancies and predilections. We cannot know what people will choose in the future because they are free to choose and to change. The economy is not an equilibrium but a dynamic process. With the growth of scientific knowledge should come the realisation that the knowledge that we have is far smaller than the knowledge that we do not have. The market is the only way to make use of knowledge we do not have and which no one has explicitly. Socialism is therefore impossible because it faces calculational chaos.

As can be seen, at some very deep level chaos has been discovered in many disciplines. Reality has a chaotic element which is unpredictable and the source of the novelty and spontaneity we see all around us. However this chaos, as we saw, is not antinomian. There is also a deep order within the chaos but it is neither deterministic nor predictable.

Spontaneous Order, edited by Naomi Moldofsky (London: Centre for the Study of Communist Economics, 1989), 64.
[1]John Gray, The Moral Foundations of Market Institutions (London: Institute of Economic Affairs, 1992), 8.
[2]G.L.S. Shackle, Epistemics and Economics: A Critique of Economic Doctrine (Cambridge: Cambridge University Press, 1972).

IV. Holism

In opposition to, or at least complementary to, the reductionist approach outlined above, a holistic approach has always had advocates. The holistic approach is to argue in contrast to reductionism that there are several hierarchically superimposed levels of structures and functions. Howard Pattee, a physicist with interests in biology, defines a hierarchy as,

> . . . an organisation of individuals with levels of authority, usually with each level sub-ordinate to the next level and ruling over the next lower level. However, neither authority nor the subordination between levels is complete. Each level has its own laws or rules which control the behaviour within each level. The effect of the subordination of the lower level to the hierarchical rule is to constrain or integrate the activities of the individuals so that they function coherently.[1]

The brain for example, has unlimited possibilities for new hierarchical levels of description. Thus while biology concentrates on one level of organisation, physics concentrates on another and psychology on yet another. Each science is largely concerned with systems at a particular level in the hierarchy of natural systems and is composed of theories and experimental laws pertaining to that level.

The problem occurs at the hierarchical interface. The languages, theories and laws of the different levels are often incompatible. It is in practice, extremely difficult to reduce one level to another, or to explain one level in terms of another. It has been done though. For example, much chemistry can be reduced to physics, and gas laws have been reduced to the laws of molecular motion. But reductionism, while a valuable and fruitful methodological approach, can easily lead to the imperialism of scientists working at one level trying to reduce everything else to that level. The lower level language is concerned with what we might call legal details, while the higher level language clarifies what is significant.

Oxford biologist and theologian Arthur Peacocke distinguishes between a hierarchy of systems, a hierarchy of theories, and a hierarchy of sciences.[2] Thus while there undoubtedly are wholes which can be analyzed exhaustively in terms of the addition of their parts alone, other wholes, particularly living organisms, cannot be. Therefore theory autonomy develops in which there are theories which cannot be reduced to a lower level theory. There are laws of economics which cannot be explained in terms of the laws of physics. Sociobiology has tried to reduce sociology to biology, but cultural evolution cannot be explained as a function of random genetic mutations. Finally there a hierarchy of science develops in which, Peter Medawar says,

> . . . the sciences become richer and richer in their empirical content and new concepts emerge at each level which simply do not appear in the preceding science.[3]

Thus finally we arrive at the ontological problem of whether the whole is more than the sum of the parts. It is clearly not always possible to study and explain the whole merely by looking at the

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[1] Harold H. Pattee, "The Problem of Biological Hierarchy," in <u>Towards a Theoretical Biology</u>, vol. 3, ed. C.H. Waddington (Chicago: Aldine Publishing, 1970), 119.
[2] Arthur Peacocke, <u>God and the New Biology</u> (San Francisco: Harper and Row, 1986), 13-17.
[3] Peter Medawar quoted in Peacocke, 17.

parts, and there are laws which apply to higher levels which cannot be explained in terms of those at a lower level. Therefore there must be some sense in which ontological reductionism is impossible. While the elements at the lower levels obey and can be explained in terms of those at that level, the laws of the higher level somehow "override?" them. The electrons in a nerve cell are still subject to Heisenberg's indeterminacy principle and yet limbs move in a definite direction and not randomly, or as Whitehead said,

> . . . if the volition affects the state of the body, then the molecules in the body do *not* blindly run. . . . Thus an electron within a living body is different from an electron outside it, by reason of the plan of the body.[1]

But as mentioned before, it is at this hierarchical interface that the problems arise.

Pattee says there are three conditions for autonomous hierarchies: they are responsible for producing their own rules, as opposed to ones imposed by an external authority. All elements within the system obey the normal laws of physics, and there is hierarchical control: ". . . those rules or *constraints* which arise within a *collection* of elements, but which affect *individual* elements of the collection."[2] An example is the social laws which are enacted by the collectivity but are applied to the individuals of the group.

While it now seems to be clear that there is a hierarchy and there are different laws that apply at different levels, the problem still remains of the interface. Not only that of the communication within the scientific community, but also the laws which allow one level to constrain the activity of another level.

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[1]Alfred North Whitehead, <u>Science and the Modern World</u> (New York: Macmillan, 1950), 116.
[2]Pattee, 124.

CHAPTER 4

SPONTANEOUS ORDER

I. Definition and overview

As has become clear from the above discussion, reality is in some deep and very real sense chaotic. This means that the determinist and reductionist program is inherently impossible. However all around us there is still order. Over the last few years the notion of spontaneous order has emerged as a unifying, inter-disciplinary way of understanding and explaining the complexity which exists both in nature and the world of humanity. Although first proposed in linguistics and the social sciences, it has more recently been observed in natural sciences undermining reductionist presuppositions. Spontaneous organized complex orders have been defined by Walter B. Weimer as,

> . . . biological, social and (only recently studied) physical phenomena that evolve without conscious or explicit planning (or externally imposed controls) according to internal regulative principles. They are characterized by decentralised or "coalitional" control, unpredictability of particulars, and immense complexity compared to simple systems. They are understandable only in terms of what Hayek has called *explanation of principle* rather than the particular. Their principles of regulation are rules of interactive constraint rather than deterministic laws. Constrained orders are determin*ate* —regulated by abstract principles—but not determin*istic* and/or predictable. They are . . . cloud-like systems that have the power to look like clockwork mechanisms.[1]

Although the notion of spontaneous order and origin of social structures existed in the ancient and middle ages, it was never fully developed. As we have seen from our survey of Greek philosophy, the ontology was prejudiced against forming a conception of spontaneous order. Hayek also claims that in part this was due to the Greek dichotomy between what is natural (*physei*) and what is artificial or conventional (*thesei* (by deliberate decision) or *nomo* (by convention)). The order which can be found in nature, *kosmos*, was obviously independent of human will and actions. *Physei* later came to be translated by a Latin grammarian as *naturalis* from which comes the category of natural law. *Thesei* was rendered as *positivus* which later became positive law. The latter is obviously the product of deliberate construction aimed at bringing about

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[1]Walter B. Weimer, "Spontaneously Order Complex Phenomena," <u>Centripetal Forces in the Sciences,</u> vol.1, ed. Gerard Radnitzky (New York: Paragon House, 1987), 260.

a certain state of affairs. The former too became equated with the law of reason. However there were other kinds of order, *taxis*, which were the result of deliberate arrangements of men. However,

> . . . if everything that was clearly independent of men's will and their actions was in this sense obviously 'natural', and everything that was the intended result of men's action 'artificial', this left no distinct place for any order which was the result of human actions but not of human design.[1]

The result was that even though the Spanish Jesuits of the sixteenth century started to develop the category of social phenomena which were not deliberately shaped by human will, it was submerged in the rise of what Hayek calls constructivist rationalism of the following centuries.

A simple example of a self-generated order is language. No single person and no council deliberated and created language. It more than anything else, is a social artifact. It is a systemic order without any deliberate overall design, "an evolved pattern rather than an excogitated blueprint."[2] Yet it has its own inner logic. When grammarians and linguists study language they discover order, the rules of grammar. But those rules were not designed by anyone. No one drew up the rules and then developed a language to fit them. Language grew and evolved over generations spontaneously as a result of human activity but not human design.[3] Language embodies the culture, wisdom and experience of generations. More than anything else it shapes our mind, the categories which we use to think and relate to others. It changes sometimes quickly, sometimes imperceptibly, in a dynamic relationship with its users and their environment. There is order, but that order is not the result of design. Both the rules of grammar and the words themselves are an example of a self-generated order. Language, is of course, spoken by humans and since the physiological structure of everyone's brain is the same, we are not surprised to find that languages have underlying structural similarities as shown by Noam Chomsky.

He showed that when learning a language we learn the rules, so that on the basis of only a few utterances we can quickly produce and understand new ones, an infinite number in fact. However these rules are not learnt rationally but tacitly. The rules themselves were not handed down by the gods, or invented; nor was the deep structure elucidated by Claude Levi-Strauss. Had it been, we would not have had to wait until recently to discover this, nor would children find grammar such a chore to learn at school.

This chapter will examine the spontaneous order that has been found in many disciplines and which is being proposed as a unifying paradigm for both the natural and social sciences.

A. Mathematics

One seldom finds squares, circles and triangles in nature. Instead there are ragged edges, broken surfaces and tangled networks. This creates problems for geographers, for example, who try to measure coastlines. Because they are so ill-defined, their length depends on the scale of measurement being used. Thus they are effectively infinite. Benoit Mandelbrot tried to construct a

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[1] Friedrich A. von Hayek, "Dr. Bernard Mandeville," in <u>The Essence of Hayek</u> (Stanford: Hoover Institution, 1984), 180.
[2] Thomas Sowell, <u>A Conflict of Visions</u> (New York: William Morrow, 1987), 69.
[3] Rostam Keyan, <u>The Evolution of Language</u> (New York: Philosophical Library, 1978), xi.

geometry of the irregular. These are entities, like coastlines, that look the same on whatever scale they are examined. He called them *fractals* because, unlike traditional geometry, with its straight lines, they attempt to describe the irregular. The Mandelbrot set is a fractal which, although comparatively easy to state mathematically, is the most complex entity know to mathematicians. Computers have been used to generate fractals of extraordinary beauty and complexity.[1] One often sees them on book covers.

Another curious fractal is the Cantor set.[2] It is built up by successive simple steps. If the middle third of a line is removed, and then the middle thirds of the remaining pieces *ad infinitum*, the set is generated. The end product has zero length but not zero dimension. At first it was thought to be only a mathematical curiosity, but now it is becoming appreciated that it corresponds closely to the way things are in the real world. The rings of Saturn have been shown by spacecraft to resemble Cantor's set, being a complex system of rings within rings within rings, an extraordinary self-generated and maintained order which, according to linear science, should have broken down .

Cellular automaton theory, developed by John von Neumann, is a mathematical model which creates self-organisation in one dimensional cellular automata through the following of simple local rules.[3] Great complexity and long range order can arise out of featureless beginnings, and even self-reproducing cases have been observed. Entropy in automata states can decline and order spontaneously appear out of disorder, because their rules are irreversible, not symmetric in time.

The mathematics of random Boolean networks also yields counter-intuitive surprises. They were first discovered by Stuart Kauffman more than 20 years ago. In a network of 100,000 elements each receiving two inputs, the wiring diagram would be very complex. The system could assume any one of $10^{30,000}$ different states. Yet he found that order emerged spontaneously and the system would settle into one of only 370 or so different state cycles![4]

Thus Pythagoras' and Descartes' mathematics have turned out to be far more subtle than they ever envisaged, and while it seems that the world can be described mathematically, it cannot be done so in the way the rationalist expected. At the heart of mathematics is chance as well as necessity, and out of this polarity can arise spontaneous order.

B. Physics

In physics too, examples of spontaneous orders have been known for a long time, but it is only recently that they have been studied seriously and attempts made to theorize them. Up until now physicists thought everything could be explained in terms of the lowest level. But there are higher level laws which cannot be deduced from the micro-level theories. And the way that the micro-level is reordered to a higher level of complexity is not clear either.

Scientists have been used to studying linear systems. Indeed, they tried to reduce all systems to linear ones. But even within the laboratory spontaneous order crept in and non-linear behaviour was observed.

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[1] A.K. Dewdney, "Computer Recreations," <u>Scientific American</u> 253 (August 1985): 16-24.
[2] Davies, <u>Cosmic Blueprint</u>, 61.
[3] Ibid., 64-66.
[4] Stuart Kauffman, "Antichaos and Adaptation," <u>Scientific American</u> 265 (August 1991): 81.

1. Ferromagnetism

A simple and common example of self-organisation is a ferromagnet. At a high temperature it exhibits no permanent magnetism. However as the temperature is reduced, all the 'micromagnets', which were jiggling around chaotically due to thermal agitation, suddenly and spontaneously line up in an ordered array to create a large-scale field. This symmetry breaking happens in groups and is the result of the magnification of an accidental fluctuation.[1]

2. Superconductivity

Something similar happens when near absolute zero a substance suddenly loses all resistance. In both cases this happens in a non-linear manner. The change is sudden and spontaneous, and not a smooth linear decline in resistance as the temperature is lowered. Trillions of molecules are all reacting simultaneously and in harmony.

3. Convection cell

When a horizontal liquid is at rest or equilibrium, the temperature throughout is uniform, symmetrical. If it is then heated from below, turbulence occurs. If the heating is continued, a threshold is reached, and there is steady cellular convection, the pattern of the convection depending on the boundary conditions. But before it settles into this pattern,

> It is universally found from both theory and experiment that the system fluctuates through as many states as possible in order to finally establish itself in a particular one.[2]

The liquid will thus spontaneously adopt a highly ordered and stable pattern of flow exhibiting long range order. What are formed are called Bérnard cells, regular hexagonal cells.

4. Video feedback

When a video camera looks at its own monitor it goes haywire. This is one of the paradoxes of self-reference. However if the boundary conditions are adjusted, images appear which show a surprising tendency to develop order and structure spontaneously. Pinwheels, spirals, mazes and waves appear and oscillate rhythmically. This is an example of self-organisation.

5. Self-organised criticality

Large interactive systems have, in the past, been studied in the same way as small ordered systems, because the methods adopted for the latter have proved so successful. It was an implicit assumption that the behaviour of large systems would be a simple multiple of small ones. It was assumed that the response of a large system to an external force would be proportional to the disturbance. However this is not the case, and in 1987 the concept of self-organised criticality was proposed by Per Bak.[3] Many systems evolve to a critical state where a minor event can set off a catastrophe which affects many elements in the system. Thus it is a holistic theory, since the whole cannot be understood merely as the sum of the parts. Examples of such systems are the stock market, ecosystems, and the earth's crust.

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[1]Carl Rau, "Order out of Chaos Through Fluctuations and Instabilities," in <u>Organisation and Change in Complex Systems</u>, 262.
[2]Manuel G. Velarde, "Self-Organisation and Evolution," in <u>Organisation and Change in Complex Systems</u>, 256.
[3]Per Bak and Kan Chen, "Self-Organized Criticality," <u>Scientific American</u> 264 (January 1991): 46-53.

The deceptively simple example of such a system is a pile of sand. If sand is gradually poured onto a surface it forms a pile. In the process of doing so the slope often becomes too steep, triggering off a small avalanche. The avalanche stops when the pile again reaches a state of critical stability. The system has two features: it is unstable in many different locations but the critical state is also very robust. Try changing the shape and location of a large pile of sand in a hurry! There are continuous local changes due to small slides, but the overall shape remains the same. The criticality is a global property of the sand pile and represents its history. Thus instead of trying to reach a state of maximum entropy spread out smoothly on the ground, the pile tries to remain in as unstable a state as possible.

The mathematical model has applications in geology to explain earthquakes, in economics to help understand the stock market, particulary 'crashes', and to explain turbulence in fluid dynamics. It is also suggested that evolution operates on the border of chaos. Healthy systems are thus not ones in a state of equilibrium, but ones which are as unstable as possible while still maintaining a global structure. They are the ones most able to respond at a decentralised level to change and disturbance, unlike the Inca empire examined earlier.

C. Chemistry

The most significant discovery in this area has been that of far-from-equilibrium systems. It has been compared in importance to the paradigm shifts wrought in science by Newtonian mechanics and thermodynamics.[1] The former was the 'triumph of necessity' and the latter the 'triumph of chance.' This new view introduces the notion of spontaneous order and self organisation, and shows how "order out of chaos", is possible. Its main discoverer is Ilya Prigogine and the Brussels school he established. He was awarded a Nobel Prize in 1977 for his work on the thermodynamics of non-equilibrium, systems which he named *dissipative systems*.

A dissipative system is so called because it can maintain complexity and order, thus appearing to avoid the second law of thermodynamics, by dissipating entropy to the environment. It is a far-from-equilibrium system which is open to the exchange of energy and matter with the environment, and includes autocatalysis in the reaction steps. This has been described by Erich Jantsch as a simple type of metabolism.[2] Free energy and new reaction participants are imported, and reaction end products are exported. In this way the system maintains an inner non-equilibrium, and the non-equilibrium in turn maintains the exchange process.

A striking example is the Belousov-Zhabatinski reaction, commonly known as a chemical clock.[3] The basic reaction consists of the oxidation of an organic acid by a potassium bromate in the presence of a suitable catalyst. A mixture of ceric sulphate, malonic acid and potassium bromate is dissolved in sulphuric aid. There is a continual throughput of the reagents into the well stirred mixture. Dyes are added to keep track of the chemical condition of the mixture, which turns red when there is an excess of Ce^{3+} and blue when an excess of Ce^{4+}. When the reagents are pumped at a low rate, near equilibrium, the mixture is featureless. If the throughput is stepped up,

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[1]Davies, Cosmic Blueprint, 83.
[2]Erich Jantsch, The Self-Organizing Universe: Scientific and Human Implications of the Emerging Paradigm of Evolution (Oxford: Pergamon Press, 1980), 31.
[3]Prigogine, 146-53.

forcing the system far from equilibrium, instead of turning a violet colour with occasional irregular flashes of red or blue as one would expect, the liquid suddenly turns blue, then red, then blue again and continues to pulsate with perfect regularity. An internal rhythm has been established. This happens because auto-catalysis introduces non-linearity into the system. What is surprising is that the regular motion is not externally imposed. It has 10^{23} degrees of freedom, yet behaves in an orderly manner. The reaction takes place at a molecular level where forces have a range of 10^{-5}cm. But the chemical clock displays ordered behaviour over a scale of several cms. Trillions of molecules are cooperating globally in perfect synchronous behaviour. As Prigogine says, "if chemical clocks had not been observed, no one would believe that such a process is possible."[1] This spontaneous formation of spatial structures violates the laws of equilibrium physics and Boltzmann's order principle. Alvin Toffler in the foreword to Order Out of Chaos makes the following comparison:

> Imagine a million white ping-pong balls mixed at random with a million black ones, bouncing around chaotically in a tank with a glass window in it. Most of the time the mass seen through the window would appear to be grey, but now and then, at irregular moments, the sample seen through the glass might seem black or white, depending on the distribution of the balls at that moment in the vicinity of the window.
> Now imagine that suddenly the window goes all white, then all black, then all white again, and on and on, changing its colour completely at fixed intervals— like a clock ticking.
> By all the traditional rules, this should not happen at all. Yet,. . . in certain chemical reactions, we find precisely such a self-organisation or ordering can and does occur—despite what classical physics and the probability theories of Boltzmann tell us.[2]

For this reason far-from-equilibrium systems have been dubbed 'active matter' by Prigogine.[3]

Spontaneous order emerges through the process called bifurcation. As a system moves away from equilibrium it reaches a *bifurcation point* where the system has to "choose" between two pathways:

> Depending on the context this may be the moment when the system leaps into a new state of enhanced organisation, developing a novel and more elaborate structure. Or it may instead become unstable and descend into chaos. At the bifurcation point the inescapable fluctuations, which in ordinary equilibrium thermodynamics are automatically suppressed, instead become amplified to macroscopic proportions and drive the system into its new phase which then becomes stabilized.[4]

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[1]Ibid., 148.
[2]Alvin Toffler, foreword to Order Out of Chaos, xvi.
[3]Ibid., 287.
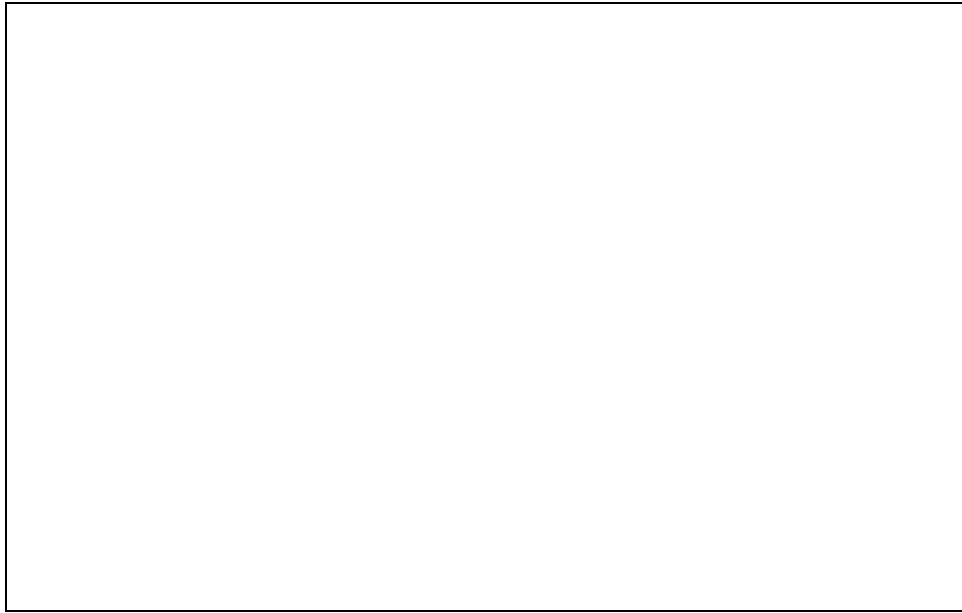[4]Davies, Cosmic Blueprint, 89.

Figure 1. Bifurcation

There is an inherent uncertainty in the outcome of this bifurcation transition because there are an endless number of microscopic fluctuations. It is a good example of a non-linear reaction. This phenomenon is called "order through fluctuations" by Prigogine.[1] The new state is stable and at a higher level of complexity than the previous one. It can continue to do this, and bifurcate and evolve if the boundary conditions change again, jumping to a still higher level of organisation.

The state into which it moves is the one closest to the borderline between order and chaos. This is the state which is naturally selected, because it is the one most sensitive to external changes and which can change and adjust most easily, and thus survive. This has recently been documented also in parallel-processing Boolean networks which have been used to model organisms:

> Networks on the boundary between order and chaos may have flexibility to adapt rapidly and successfully through the accumulation of useful variations. In such poised systems, most mutations have small consequences because of the systems' homeostatic nature. A few mutations, however, cause larger cascades of change. Poised systems will typically adapt to a changing environment gradually, but if necessary, they can change rapidly. These properties are observed in organisms.[2]

This can be observed in simple ways too. Contrary to expectation, things do not seek out the state of maximum entropy and disorder, but the state of greatest instability instead. For example, in the self-organised criticality we saw above, sand forms a cone. The state of greatest entropy would be for it to be all spread out. A pile is very unstable. If some sand is removed from the base, more slides down until it again stops in the state of minimum stability.

The new state taken after bifurcation is also one of minimum entropy production. During the transition itself entropy production increases significantly, but close to its autopoietic state it tends to a minimum.[3] This too is characteristic of organisms.

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[1] Prigogine, 177.
[2] Kauffman, 82.
[3] Jantsch, 50.

This sensitivity of a far-from-equilibrium system to external fluctuations is an example of the way it spontaneously adjusts to the environment. There are a countless number of micro fluctuations occurring, both internally and externally generated. It has been postulated that gravitational fields which would have a negligible effect on an equilibrium system can lead to pattern selection. Gravity magnifies the effect of fluctuations.[1] It is also known that some bacteria are sensitive to magnetic fields.

This element of indeterminacy, whereby it is impossible to predict which way a system will evolve, has been compared to Heisenberg's Principle as an example of macroscopic indeterminacy.[2]

The dissipative structure exhibits *autopoiesis,* self-production, and has been called *self-referential* because it "knows" what it needs to import and export and thus renew itself, and evolves if necessary. Thus if the equilibrium changes again, and another bifurcation point is reached, it will again "choose" which new state and structure to adopt. It is not like a machine whose function is given from outside. Each new transition is marked by a break of spatial symmetry. This is why it will not go back to the former state as long as the system is maintained.

Dissipative systems are also irreducibly historical. Their future behaviour is not independent of their past since,

> . . . the minuscule differences in initial conditions become amplified in these structures in such a way that *information about the past is conserved*.[3]

If a dissipative structure is forced to retreat in its evolution, by for example, a change in the non-equilibrium, it usually retraces its own steps, exhibiting a primitive holistic memory.[4] However as mentioned before, unlike deterministic systems, there is true creativity, because the new level was not there implicitly before self-organisation since it was merely a random fluctuation. While it is possible to make an *ex post facto* analysis, and thus understand what happened, it is not possible to predict the future *à la* Laplace even if the position of all the particles was known. Thus,

> . . . the bifurcation, the transition to a more complex level of organisation is ontologically, not just epistemologically stochastic; it thus cannot even in principle fit the deductive-nomological model of explanation.[5]

The knowledge required to make the prediction is not available because it does not exist, a conclusion we have met before in economic analysis. The only way to explain the bifurcation in any meaningful way, according to Roqué is through narrative, a way that "recreates the leap by recounting it," a view not unlike that of the critique of rationalism in ethics of Alasdair MacIntyre.[6]

The application of the theory of dissipative structure is an extremely rich research program in the biological sciences. It can contribute to an understanding of the evolutionary process as well

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[1]Prigogine, 163-64.
[2]Jantsch, 49.
[3]Prigogine, 280.
[4]Jantsch, 49.
[5]Alicia Juarrero Roqué, "Non-Linear Phenomena, Explanation and Action," <u>International Philosophical Quarterly</u> 28 (September 1988): 250.
[6]Alisdair MacIntyre, <u>After Virtue</u> (Notre Dame: Notre Dame Press, 1981).

as to the functioning of living organisms, which are all far-from-equilibrium systems which behave in a non-linear fashion. Prigogine himself has shown how the construction of termite nests, among other phenomena, can be explained through fluctuations, without postulating a collective mind.[1]

Another example is the functioning of ecosystems. Healthy and resilient ecosystems are generally far from their equilibrium positions. Instead they are characterized by large spatial and temporal fluctuations. They prefer an existence on the boundary which man finds paradoxical and alarming. Near equilibrium the systems lack resilience though and may be easily destroyed by random fluctuations such as climate changes.[2]

Because far-from-equilibrium systems developed new structures spontaneously and unpredictably at a higher level of organisation, disequilibrium has been described by Prigogine as, "the source of order in the universe; it brings order out of disorder." Furthermore, he goes on to reverse the classical order by stating that the irreversible processes, the phenomena of becoming are primary, whereas reversible processes, the phenomena of being, are secondary.

> The classical order was: particles first, the second law [of thermodynamics] later—being before becoming! It is possible that this is no longer so when we come to the level of elementary particles and that here we must *first* introduce the second law before being able to define the entities . . . after all, an elementary particle, contrary to its name, is not an object that is 'given'; we must construct it.[3]

If the primary particles are not primary but derivative, this means that higher levels are more fundamental. In other words there is the downward causation of a higher level in a hierarchy on a lower level which Howard Pattee talked about above. So dissipative structures show the mechanism for the spontaneous evolution of hierarchy. However it still remains to explain how a disorganised collection of molecules assemble themselves into order, exhibiting qualities which are irrelevant at the atomistic level. What is it that is exerting global coordination?

D. Biology

1. Evolution

Charles Darwin was by no means the discoverer of evolution. Hume suggested a general theory of evolution in his Dialogues Concerning Natural Religion. Erasmus Darwin, Charles' grandfather, is known to have been influenced by Hume, and Charles himself was reading Adam Smith's The Theory of Moral Sentiments in 1838 while he was formulating his own theory. Indeed the biological theory of evolution is merely a simplified form of the version long known in the social sciences.[4]

The Darwinian theory of evolution has two main hypotheses. The first is natural selection, the process whereby in the continual struggle for resources the badly-adapted compete poorly and die. The better-adapted survive, reproduce and supplant the less well-adapted. However this is

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[1]Prigogine, 181-89.
[2]Jantsch, 66.
[3]Ilya Prigogine, From Being to Becoming: Time and Complexity in the Physical Sciences (San Francisco: Freeman, 1980), 199.
[4]F.A. Hayek, The Fatal Conceit: The Errors of Socialism (Chicago: University of Chicago Press, 1988), 24.

merely tautologous, since it is merely saying that those organisms better suited to survive will survive better. The second is the mechanism by which evolution occurs, random mutation.

However this was doubted, even by Darwin, largely because of the limitations of scientific knowledge in his own day. Even with the advent of Mendelian genetics the assertion that mutations are <u>random</u> is a philosophical, not a scientific statement.[1] At the same time some doubt has been thrown on random mutation as the mechanism. Mutations tend to degrade, leading to chaos and disorder. For example a mistake in the blueprint of an aircraft would lead to a disaster. DNA is the transmitter of the information to construct the organism. Greater complexity requires greater information. However random disturbances create 'noise' and reduce information. It is thus highly unlikely that a random series of mutations would all happen serially and in the right order to produce, say, an eye. Randomness alone cannot be the source of order. The probability of a Stanley Miller type soup leading to a small virus after 1 billion years is $10^{2,000,000}$ to 1 against. Thus the spontaneous generation of life by random molecular shuffling is highly improbable.[2]

However new discoveries of self-generating order, ideas Darwin might have applied had he read Hume and Smith more closely, are indicating that, as Manfred Eigen one of the discoverers of dissipative systems has said,

> . . . the evolution of life, if it is based on a derivable physical principle, must be considered an *inevitable* process despite its indeterminate course . . . it is not only inevitable "in principle" but also sufficiently probable within a realistic span of time. It requires appropriate environmental conditions (which are not fulfilled everywhere) and their maintenance. These conditions existed on earth.[3]

As stated above, the fact that there is order and hierarchy in the universe is beyond dispute. The problem is to explain how it came about. It may well be the case that mutations have a part to play in the evolutionary scheme, however whether these mutations are random or not is a philosophical question. As we saw above, the notion of 'downward causation' and dissipative systems 'choosing' which fluctuation is most appropriate, imply that advantageous mutations could be caused or selected for.

To assert that mutations are purely random course has ethical implications too of course. It implies that there is no meaning to life. As Jacques Monod who took this position said,

> . . . chance *alone* is at the source of every innovation, of all creation in the biosphere. Pure chance, absolutely free but blind, at the very root of the stupendous edifice of evolution.[4]

He went on to argue that values were the arbitrary creation of man which could be redesigned so that a socialist order could be established.

It is often said that evolution appears to violate the second law of thermodynamics. However that law applies to closed systems. Living organisms are not closed systems. They import

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[1]Arthur Peacocke, "Chance, Potentiality and God," in <u>Beyond Chance and Necessity: A Critical Inquiry into Professor Jacques Monod's Chance and Necessity,</u> ed. John Lewis (Atlantic Highlands, N.J.: Humanities Press, 1974), 17
[2]Davies, <u>Cosmic Blueprint</u>, 117-18.
[3]Manfred Eigen quoted in Peacocke, 64.
[4]Jacques Monod, <u>Chance and Necessity: An Essay on the Philosophy of Modern Biology</u> (New York: Alfred Knopf, 1971), 112.

energy to maintain themselves and export entropy to their environment. There is thus a net increase in entropy. But the fact that they can evade the degenerative arrow of time does not explain how increasing complexity comes about. As Paul Davies indicated,

> Freeing a system from the strictures of one law does not prove that it follows another. Many biologists make this mistake. They assume because they have discovered [the] loophole in the second law, the progressive nature of biological evolution is explained. This is simply incorrect. Preventing a decrease in *order* might be a necessary condition for the growth of organisation and complexity, but it is not a sufficient condition.[1]

The problem within evolutionary theory has been to explain the development of new levels within the hierarchy. Evolution within a level is not so difficult to explain. The problem has been stated by H.J. Hamilton as follows,

> How and in conformance with what fundamental laws do elements at one level of organisational complexity combine spontaneously to form stable elements of a higher order and in so doing yield some measure of their freedom of movement or behaviour to constraints imposed by the higher-order unit?[2]

Hamilton tries to show how evolution is a natural consequence of non-linear thermodynamics. He proposes a new principle of thermodynamic selection such that,

> . . . evolution to more complex forms reduces the mean specific entropy production of the system [and] will tend, other things being equal, to increase the probability of continuous growth through the fissioning or self-reproduction process and therefore the frequency of occurrence of such mutant systems.[3]

Thus evolution, far from being contrary to the second law, is in fact a natural consequence of it. However Hamilton's work while suggesting a fruitful research program, has not yet been proven to have a sound empirically proven basis yet.[4]

2. Morphogenesis

The problem of global action is particularly pertinent in the biological sciences in trying to understand the process of *morphogenesis*, the creation of biological forms. In the growth of a fertilized egg, every cell is identical, yet somehow each knows what to become. Whether to become a brain cell, or a liver cell, or a blood cell. There is global organisation occurring, which has led some biologists to postulate the existence of a morphogenic field. The DNA is a molecule and cannot co-ordinate global activity. There must be a meta-plan which transcends the DNA itself.

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[1]Davies, Cosmic Blueprint, 113.
[2]H.J. Hamilton, "A Thermodynamic Theory of the Origin and Hierarchical Evolution of Living Systems," Zygon 12 (December 1977): 290.
[3]Hamilton, 316.
[4]Peacocke, 149.

Not only that, but if an embryo is mutilated in the early stages, it can rearrange itself, and by a process called *regulation*, reposition cells and correct the problem. In the same way, a minced hydra will reassemble itself in its entirety.

While dissipative structures show how spontaneous order can arise, there is a fundamental difference with living organisms. There is no global plan for a convection cell, and the boundary conditions are manipulated externally. They are unpredictable, whereas biological systems are very predictable. Cats do not give birth to dogs. So bifurcation can explain the mechanism, but cannot explain how global order is co-ordinated. As mentioned before, fields are now recognized by physicists as being more fundamental than particles.[1] In fact particles are regarded as disturbance in field. The biologist Rupert Sheldrake postulated the existence of fields which are picked by DNA acting as a receiver. He suggests that once a new form has come into existence it sets up its own morphogenic field.[2] However this too has not been verified.

E. Gaia

In the 1970's the Club of Rome published a report, The Limits to Growth, in which they showed that, using a mathematical model of the earth and the effect of man on the earth, all the natural resources would be used up and all life would cease within 20-30 years. The graphs in the book dramatically became exponential as the future of mankind was shown to be doomed unless some drastic steps were taken. Similar apocalyptic comments have been made more recently about the burning oil wells in Kuwait, the ozone layer, and global warming. However we are still here. The main problem with all these calculations is that they treat the earth as if it were a static linear system. However as mentioned before, all living organism are dynamic and non-linear as is much else outside the laboratory. Non-linear systems, such as dissipative systems, "live" on the border-line between order and chaos where they can most easily evolve through bifurcation to a different level of structure.

James Lovelock in 1975 propounded the idea that the earth, which he calls *Gaia*[3], is a self-organising and self-regulating biosphere, an autopoietic system. Over aeons the presence of life has transformed the environment in which that very life exists. A lifeless earth, he calculated would have 98% carbon dioxide, 1.9% nitrogen and no oxygen. Its surface temperature would be between 240˚-340˚C. (The actual earth has 0.03% CO_2, 79% N, and 21% O_2 and its surface temperature is 13˚C).[4] That there is an environment for life on the earth is attributed to the Earth's total biosphere, constituting a feedback mechanism which seeks an optimal physical and chemical environment for life on the planet. Thus the oxygen is generated by prokaryotes who thrive in an oxygen-free atmosphere. The oxygen-carbon dioxide cycle, involving animals and plants, keeps the level of oxygen optimal. Too much and there would be spontaneous combustion of the forests, too little and animals would die. The correct level is self-regulated. If the level of oxygen fell again, 1 gram of

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[1]Ibid., 12.
[2]Ibid., 102-06, 164.
[3]James Lovelock, Gaia: A New Look at Life on Earth (New York: Oxford University Press, 1979).
[4]James Lovelock, The Ages of Gaia: A Biography of Our Living Earth (New York: Bantam Books, 1990), 9.

prokaryotes could regenerate all the oxygen there is in only 40 years.[1] Of course, oxygen is poisonous for them, thus acting as a self-regulating feedback mechanism.

At the same time the luminosity of the sun has increased by 30% during the earth's history. Yet the earth's temperature has remained remarkably constant over this period. When the sun was cooler the high concentration of CO_2 kept it warm. While the sun became warmer, the CO_2 was 'fixed' into living organisms through photosynthesis and the temperature kept cool. At the same time ozone was generated which blocked the dangerous ultra-violet rays.

This is why computer predictions have proved to be so unreliable. The earth is a self-regulating system. Sun spots can have a greater impact on the earth's climate than anything mankind can do. There is no designer, no planner. The whole biosphere is a dynamic, non-equilibrium, self-generated order. Some religious people have found in the Gaia hypothesis hope for a more holistic perspective on nature. Lovelock himself has dropped his earlier proposal that the earth was in some sense a living organism, after discovering natural mechanisms whereby it was possible to explain the phenomena he had observed. The problem is to provide a philosophical basis for explaining such a large whole which integrates and coordinates such a vast hierarchy of parts. Aristotle's and Thomas Aquinas' philosophies have been proposed recently as candidates[2] along-side various eastern perspectives.

F. Cosmology

Finally, and briefly, the whole history of the universe can be explained as a self-generating order which came about initially as a quantum fluctuation of 10^{-33}cm of space that inflated. The subsequent symmetry breaks made each step irreversible, and while generating a lot of entropy also released opportunity for complexity to develop. Barring the important fine-tuning problem, it is possible to show within the known laws how the universe naturally developed to its present ordered state. Edward Tryon in 1973 calculated that the total rest mass of stars and galaxies in the universe equalled the total gravitational energy. This means that the total energy of the universe is zero. The universe could be a quantum fluctuation. Its total charge, and angular momentum is zero. Because of the symmetry break, by Heisenberg's principle it can last for eternity. In that sense the universe could be described as a free lunch.[3]

More seriously, it is gravity which is seen as the "fountainhead of cosmic order" because it can act over astronomical distances and is universally attractive. This enables it to organise matter, causing the growth of cosmic structures in defiance of the laws of thermodynamics.[4] Gravity is opposed by the rotational centripetal forces of celestial objects. If it were not, everything would collapse in on itself. Stars and planets exist because of the electromagnetic pressure within.

G. Social sciences

It was in the social sciences that spontaneous order was first recognized. The idea of evolution was expounded by David Hume a century before Charles Darwin. However, as

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[1] Jantsch, 114.
[2] Laura Landen, "A Thomistic Analysis of the Gaia Hypothesis: How New is this New Look at Life on Earth?" The Thomist 56 (January 1992): 1-18.
[3] Davies, Superforce, 183-205.
[4] Davies, Cosmic Blueprint, 133-38.

evolutionary theory came to be adopted by the natural sciences, first the biological and more recently the 'hard sciences', the paralysing ideas of the natural sciences, namely determinism and reductionism moved the other way.

1. Bernard Mandeville

Hayek traces the modern exposition and development of the idea of spontaneous order to the Dutch medical doctor Bernard Mandeville, who in the early seventeenth century published his notorious <u>Fable of the Bees: or Private Vices Publick Benefits</u>. In England Mandeville developed and defended the paradox, also noticed by Thomas Aquinas that, *multae utilitates impedirentur si omnia peccata districte prohiberentur*—much that is useful would be prevented if all sins were strictly prohibited. Mandeville's thought was not original, but the startling use he made of old materials made him infamous. In contrast to moralists, who thought that even though God and Nature could turn private vice to public advantage, the world would be better off without any vice at all, Mandeville audaciously declared that public benefits existed not in spite of, but because of, private vices. His bee-hive prospers because of, not in spite of pride, selfishness, corruption, luxury, hypocrisy, fraud, and injustice. Thus he seemed to be suggesting that,

> Impure motives can and do produce beneficial results . . . and . . . therefore to get a good society, you need only go on being as wicked as you like.[1]

Mandeville's views naturally provoked outrage and indignation, the more so because they were hard to refute. Indeed Adam Smith, David Hume and Francis Hutcheson, leading members of the Scottish Enlightenment, all devoted much space to denouncing Mandeville while "accepting much of the substance of his argument."[2] However Mandeville was not advocating vice. He was merely attempting, much like Machievelli before him, a functional description and analysis of the real world. His use of myth has recently been construed as the classical form for showing how order comes out of the primeval chaos.[3] It is in the same mould as Aesop's fables, seeking to explain human origins through explaining the origin of rationality, language and moral sensibility. Despite protestations to the contrary, Mandeville saw himself as showing the necessity for revelation and the practice of Christianity. His main and broader contention, Hayek claims, was that,

> . . . in the complex order of society the results of men's actions were very different from what they had intended, and that the individuals, in pursuing their own ends, whether selfish or altruistic, produced useful results for others which they did not anticipate or perhaps even know; and, finally, that the whole order of society, and even all that we call culture, was the result of individual strivings which had no such end in view, but which were channelled to serve such ends by institutions, practices, and rules which also had never been deliberately invented but had grown up by the survival of what proved successful.[4]

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[1]Basil Willey, <u>The Eighteenth Century Background</u> (New York: Columbia University Press, 1940), 98-99.
[2]M.M. Goldsmith, "Regulating Anew the Moral and Political Sentiments of Mankind: Bernard Mandeville and the Scottish Enlightenment," <u>Journal of the History of Ideas</u> 49 (October 1988): 603-05.
[3]Stephen H. Daniel, "Myth and Rationality in Mandeville," <u>Journal of the History of Ideas</u> 47 (October 1986): 599.
[4]Ibid., 179.

Mandeville was a pioneer in elaborating and applying this insight to the spontaneous growth of the orderly social structures of law, morals, language, the market, money and technological knowledge.

2. The Scottish Moralists

David Hume closed the enlightenment by showing the futility of the whole rationalist enterprise. "The most perfect philosophy of the moral or metaphysical kind," he said, "serves only to discover larger portions of [our ignorance]". He demonstrated the limits of reason through his radical scepticism, undermining the rational basis for causality and God at the same time.

It was not that Hume did not believe in causality, or indeed God. He just set out to show that the basis for people's belief was habit and custom rooted in experience, and not because they had reasoned it all out for themselves. Since this was so, it was not possible to prove the existence of God or indeed of anything. Just by rational means one cannot discover the cause of an object or the effect it will have. For example, one learns that a fire is hot from experience. Such cause and effect relationships are discoverable only by experience. So causality is known not *a priori* but from experience. Since our knowledge comes from experience it suffers from the lack of certainty inherent in induction.

> . . . every effect is a distinct event from its cause. It could not, therefore, be discovered in the cause, and the first invention or conception of it, *a priori*, must be entirely arbitrary. In vain therefore should we pretend to determine any single event, or infer any cause or effect, without the assistance of observation and experience.[1]

When we find objects constantly conjoined, a cause followed by an effect, although a person never observes any tie between them, he "*feels* these events to be *connected* in [the] imagination"[2]. So the "appearance of a cause conveys to the mind, by a customary transition, to the idea of the effect." The principle behind why we infer cause and effect in a relationship is custom and not reasoning.

> All belief of matter of fact or real existence is derived merely from some object, present to the memory or senses, and a customary conjunction between that and some other object . . . Custom, then, is the great guide of human life. It is that principle alone which renders our experience useful to us, and makes us expect, for the future, a similar train of events with those which have appeared in the past. Without the influence of custom, we should be entirely ignorant of every matter of fact beyond what is immediately present to memory and sense. We should never know how to adjust means to ends, or to employ our natural powers in the production of any effect.[3]

Hume was notoriously anti-metaphysical, demanding that his readers commit to the flames any volume of divinity or school metaphysics because they contained nothing but "sophistry and illusion."[4] Instead he sought to describe why people actually believed in causality and morality, and how institutions of society did arise. He and the other Scottish Moralists, Adam Smith, Adam

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[1]David Hume, <u>An Enquiry Concerning Human Understanding</u>, 3rd. ed., ed. L.A. Selby-Bigge (Oxford: Clarendon Press, 1975), 30.
[2]Ibid., 75-76.
[3]Ibid., 45-46.
[4]Ibid., 165.

Ferguson, Francis Hutcheson, and south of the border, Edmund Burke, developed an anti-rational, evolutionary, experiential basis for morality, summed up in Hume's phrase, "the rules of morality . . . are not the conclusions of our reason."[1] Moral distinctions were derived from a moral sense. Morality is felt more than judged, and this moral sense is in large part inherited in our upbringing when children.

These moral rules were a product of cultural evolution, a social artifact and the outcome of experience. They were not divine, innate nor reasonable, although religion was often one of the chief ways they were transmitted and inculcated.[2] Their utility, and ultimately only justification, was measured by how much they promoted human welfare. When we wish to learn something, we are more inclined to seek someone with experience, rather than someone who has merely intellectualised or just read books.

In Hume there is no abstract state of nature such as we find in the contract theorists Hobbes, Locke and Rousseau. There never was a time when abstract individuals existed outside society and came together to form society. Society is an inevitable consequence of the family, and since the family is as old as mankind, society is as well. The family has a very high place in Hume's thought. He criticizes polygamy and divorce, praising the practical wisdom of monogamous marriage in comparison.[3] The family is regarded as the transmitter of tradition, morality, justice, education and the basic unit of society.

So in describing the genesis of civilization Hume distinguishes between family relationships and social relationships. The former are natural because they are based on affection, whereas the latter are artificial, based as they are on understanding. We have social relationships only if we think they are useful. The two are quite distinct. If affection enters into social relationships justice becomes corrupted by favouritism. It is just as wrong for legalism to infiltrate familial relationships, which should be based on love, friendliness and charity.

The family, Hume says, was initially not a moral but a natural institution based on sexual attraction and love for children. The family expands, gradually becoming a small society, but as it does so the strength of affection declines as the distance between people increases. In favourable circum-stances these small societies could merge. Friendships are also established between people of similar temperament. Man also has a natural sensitivity for people and a desire to help the afflicted, because through sympathy he realises that everyone reacts in a similar way to similar situations.

Eventually there can be no further expansion, because relations between people become strained due to a common desire for scarce goods. There comes about a concurrence of certain qualities of the human mind (selfishness and limited generosity), and a situation of an external nature (scarcity compared to wants and desires for certain goods). This can become antagonistic

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[1]David Hume, A Treatise of Human Nature, 2d ed., ed. L.A. Selby-Bigge (Oxford: Clarendon Press, 1978), 457.
[2]"Religion, even in its crudest form, gave a sanction to the rules of morality long before the age of artificial reasoning and philosophy." Adam Smith, The Theory of Moral Sentiments, quoted in The Wisdom of Adam Smith, ed. Benjamin A. Rogge (Indianapolis: Liberty Press, 1976), 34.
[3]David Hume, "Of Polygamy and Divorces," The Philosophical Works, ed. Thomas H. Green and Thomas H. Grose, vol. 3, Essays: Moral, Political, and Literary, vol. 1 (Darmstadt, Germany: Scientia Verlag Aalen, 1964; reprint of new edition, London, 1882), 231-39.

and destructive if there is no restraint. So social relations have to be brought within a framework of commonly accepted rules if there is to be society. If there is no society, everyone or every small group has to do everything themselves, which is impossible. There could be no specialisation and people could not rely on one another for assistance. In order for there to be society and for people to be able to cooperate, Hume identifies three *Principles of Justice*. The impetus to justice is selfishness and a shortage of resources. If people were completely generous and there was an abundance, there would be no point in people claiming this to be "mine."

The first of these is stability of possession[1]. People naturally share what they have within the family, with those for whom they have a natural affection. Scarcity though leads to envy and conflict. People want things for themselves and their family. But at the same time everyone wants to be left undisturbed in the enjoyment of his proper possessions. People want to <u>own</u>, not merely possess, goods. So the rule that "every man no matter how we happen to feel towards him, be left undisturbed in the enjoyment of his proper possessions" develops, and is followed because people believe it to be useful. They know their own desires, and through feeling sympathy for others, extrapolate that everyone feels the same way. Through this ownership relationship exists, not just between the person and the thing, but also between people, because that ownership is acknowledged. So ownership is defined relationally. It is an artificial social convention. But once everything is owned by someone, the contention is stopped as long as everyone abides by this convention. The *de facto* qualifications for ownership (Hume is not interested in abstract *de jure* ones), are present possession, occupation, prescription, accession and succession. These are the correct rules, because they are the ones most natural and in harmony with human nature and inclinations. Thus they are least likely to be questioned. The benefit of the institution of property is that the short term outlook of most people is replaced by a long term view. For example, if people can pass things on to their descendants, as is their natural inclination, they are more likely to be industrious and frugal.[2]

However it is not enough for people to have stability of possession. Since people have different goods there has to be a way for people to be able to exchange their property. The second principle is therefore, the convention that rights over goods may be transferred by consent, and only by consent.[3] This means that trade the consequent division of labour becomes possible so that goods can be produced which are available to all.[4]

Again, it is very inconvenient to have to barter and have simultaneous direct exchange of goods. One person's crops may be ripe in the spring and another's in the autumn. So the third principle is required, performance of promises.[5] If people make promises which are directed towards some future performance, they should keep them. Otherwise there can be no trust, no trade and no society.[6]

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[1]David Hume, <u>A Treatise of Human Nature</u> (Oxford: Oxford University Press: Press, 1978), 501f.
[2]Hume's three Principles of Justice are comparable to the three Great Blessings in <u>Divine Principle</u>. This one, stability of possession is like the third blessing, to have dominion over the creation, to be Lord of Creation, co-creator with God and perfect one's creativity through this.
[3]Hume, 514f.
[4]This principle compares to the second Blessing, the establishment of a family which is based on the give and take relationship.
[5]Ibid., 516f.
[6]This compares to the first Blessing, that a person should unite mind and body centred upon God. The words and deeds of such a

These principles are the rules of competition, the basic constitutional laws of society. All other laws are, or should be, an elaboration of them. They were not however, developed in abstract, but were tacitly accepted and followed. In a sense they were merely an extrapolation of the good manners learnt in the family. They were by no means the last word on behaviour, but were the outer limit of acceptable behaviour. In that sense, what is defined by law is not what should be done, but what is unacceptable. The freedom to be creative lies within that framework. The daily oil which smoothed along relations was not law though, but good manners. As Edmund Burke explains,

> Manners are of more importance than laws. Upon them, in a great measure, the laws depend. The law touches us but here and there, and now and then. Manners are what vex or soothe, corrupt or purify, exalt or debase, barbarize or refine us, by a constant, steady, uniform, insensible operation, like that of the air we breathe in. They give their whole form and colour to our lives. According to their quality, they aid morals, they supply them, or they totally destroy them.[1]

Laws are for criminals, to define the outermost limit of acceptable behaviour. Thus strictures against murder and theft are two of the most important laws to enforce. The overwhelming majority of people who have a shred of decency do not need to worry about these laws, because they will not even think of violating them. Thus laws are not oppressive because they only protect the freedom of righteous people, guaranteeing a safe environment free from arbitrary coercion. However, when a government tries to use laws to make the people do what it wants, and not do what it disapproves of, the result is that people look for ways around the law which prevents them from doing what they regard as legitimate. The result is that the law falls into disrepute, a very dangerous situation.[2]

From the first of Hume's principles develops a society of owners, from the second, society as a market and from the third, society as moral. These principles are neither natural nor arbitrary. They are artificial conventions, but they work once discovered. Nor are they reasonable or the product of reason. Normal people no more consciously sit down and develop a rational basis for their morality as they come to believe in God by working their way through Aquinas' five ways. People act out of habits which they have acquired, mainly at home as children. Few people plough through Spinoza's Ethics before making a decision. Instead people tend to live by maxims and aphorisms and conform to principles they would have difficulty in stating, let alone rationalising. These maxims represent the accumulated tacit wisdom and experience of previous generations and are found to work. Hence the wisdom literature in the Bible and elsewhere.[3]

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person would be the same. They would be trustworthy and keep their promises.
[1] Edmund Burke, quoted in Gertrude Himmelfarb, "Manners and Morals: What the Victorians Knew," The American Scholar 57 (Spring 1988): 232. Confucius uttered similar sentiments: "Guide the people by governmental measures and regulate them by the threat of punishment and the people will try to keep out of jail but will have no sense of honour or shame. Guide the people by virtue and regulate them by *Li* (propriety) and the people will have a sense of honour and respect".
[2] Confucius again, "In acting as a judge of lawsuits I am as good as anyone. But the thing is to aim that there should not be any lawsuits at all."
[3] Hume's views can be compared to that of Chinese philosophers: In Chuang-tzu's thought there are two stages: All principles for grounding the rules of conduct are themselves groundless, and at the rock bottom of scepticism there remain spontaneity and a single imperative to guide it, 'Mirror things as they are'. Graham, 193. And again "Reason is for question of means; for your ends in life listen to aphorism, example, parable, poetry."

It is self-interest that initially leads to them being adopted and enforced. Great inconvenience is caused by people who transgress the rules. For example it is confusing if people only keep promises if it is convenient for them. Later these rules become associated with a sense of moral obligation. No particular result or aim should guide the application of these rules since any particularism would in fact destroy them. In that sense they are purposeless. Hume would have been very critical of situationalism or judging a case on its merits.

Order then, does not come from government, but is antecedent to it. Order is set up by people pursuing their own legitimate interests, through cooperating with others within a stable environment, ultimately secured through the universal application of the same general and inflexible rules of justice, but in which people normally respect each other, have sympathy for each other, have a sense of decency and conduct themselves with good manners. This happens naturally, and without conscious purpose everyone's interests are harmonized. As Adam Smith said in his famous passages about the 'invisible hand', where men are,

> . . . led by an invisible hand . . . without intending it, without knowing it, [to] advance the interest of society.[1]

> . . . by directing that industry in such a manner as its produce may be of the greatest value, he intends only his own gain, and is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention. Nor is it always the worse for the society that it was no part of it. By pursuing his own interest he frequently promotes that of society more effectually than when he really intends to promote it. I have never known much good done by those who affected to trade for the public good.[2]

In fact if we could rely on others to fulfil their obligations and to always behave decently, government would be almost unnecessary. So laws enforced by government are necessary for criminals, but anyone who conducts himself properly need never have anything to do with government or the law, a situation that used to prevail in nineteenth century England.[3]

It is from this ultimate need to preserve order and a free environment that Hume explains the origin and function of government. It is within the family that we learn the value of cooperation, ownership, fair play, promising and manners. Thus justice and society is antecedent to government, and in fact government owes its legitimacy by keeping and upholding these principles.[4] As the family grows by generations the bonds of affection become weaker, and society

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[1]Adam Smith, The Theory of Moral Sentiments, quoted in The Wisdom of Adam Smith, 125.

[2]Adam Smith, An Inquiry Into the Nature and Causes of the Wealth of Nations, ed. Edwin Canaan (New York: The Modern Library, 1937), 423. Smith does not equate self-interest with selfishness or greed, but with the natural desire to better one's lot and look after one's welfare. This would include one's family, friends and associates. Self-interest can be either virtuous (prudence) or evil (greed). Greed is to be discouraged because it prevents good economic performance and is indeed antithetical to a well-run system. Thus Smith neither recognized nor advocated greed as the basis of the free market. Patricia H. Werhane, "The Role of Self-Interest in Adam Smith's Wealth of Nations," The Journal of Philosophy 86 (November 1989): 669-80.

[3]"Until August 1914 a sensible, law-abiding Englishman could pass through life and hardly notice the existence of the state, beyond the post office and the policeman. He could live where he liked and as he liked. He had no official number or identity card. He could travel abroad or leave his country for ever without a passport or any sort of official permission. He could exchange his money for any other currency without restriction or limit. He could buy goods from any country in the world on the same terms as he bought goods at home. For that matter a foreigner could spend his whole life in this country without permit and without informing the police..." A.J.P. Taylor, English History 1914-1945 (Oxford: Oxford University Press, 1965), 1.

[4]This thesis has been further developed by the French sociologist Emmanuel Todd who in his book Explanation of Ideology (Oxford: Blackwell, 1985) has argued that ideology is to be explained by family structure. The values and rules of the family are the

develops based on property and contract. So how does the belief in justice, which is inculcated by parents in the family expand to the societal level? Through experience of course Hume says. If a person acts unjustly, people will not cooperate with him and he will feel deprived. So he has to change his beliefs, since the penalty makes the immediate seizure of goods to gratify his desires less attractive. Whereas before he kept the principles because of parental influence, now he realises that ownership and contracts are good in principle, even if they may be contrary to his immediate interest. Since everybody has a very similar experience, they develop similar beliefs about justice. Thus there develops a presumption in favour of justice, a convention. By experience people learn that even strangers have learnt this, and there follows the rapid expansion of society. In certain circumstances long range selfishness and moral obligation are not sufficient to overcome the temptations of short term gain. This is why people break the law. Therefore it is necessary to supplement obligations with the threat of punishment meted out by government. A few people are set up to execute the principles of justice.

However Hume says that the problems of internal justice were not the cause of government so much as the problem of war. Often there are conflicts with strangers, so the community realises that it needs to band together to fight the war. A government is needed to conduct an orderly war. Once set up this government easily continues in time of peace, and seldom surrenders its new powers and authority. This has been further illuminated by others such as Robert Carneiro.[1] Civil society, in Hume's view, came about from the interplay of various forces, political and otherwise,

> . . . the actualization of the principles of governance comes about, not by human insight and design, but rather, accidentally, as an unanticipated consequence of less worthy human strivings.[2]

or as Hume's contemporary and close associate Adam Ferguson put it,

> Every step and every movement of the multitude, even in what are termed enlightened ages, are made with equal blindness to the future; and nations stumble upon establishments, which are indeed the result of human action, but not the execution of any human design.[3]

The function of government then, is to support the three Principles of Justice which guarantee property, trade and contracts upon which society is founded, and to enable that spontaneous evolution to continue.

3. Carl Menger

The next person who made a significant contribution to the understanding of spontaneous order was Carl Menger (1840-1921). He was the founder of the Austrian School of Economics which included Eugen Böhm-Bawerk, Ludwig von Mises and Friedrich von Hayek. He was also a co-founder, with William Stanley Jevons, of the theory of marginal utility. However Jevons and

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source of the ideology of the people and this is ultimately reflected in the institutions that govern them. Thus political change is ultimately a reflection of which type of family is becoming dominant in a country.
[1]Robert L. Carneiro, "A Theory of the Origin of the State," The Politicization of Society.
[2]John B. Stewart, The Moral and Political Philosophy of David Hume (New York: Columbia University Press, 1963), 158.
[3]Adam Ferguson, An Essay on the History of Civil Society (London, 1767), 187.

Leon Walrus used the concept to demonstrate the conditions for equilibrium in a given exchange environment. This analysis "took on a fundamentally static quality being basically an attempt to stipulate the prerequisites for an equilibrium state."[1] In contrast, Menger's Austrian approach had essentially dynamic qualities, because instead of making a model, he investigated the exchange mechanism itself, which was in a state of disequilibrium. All economic data—tastes, techniques, available resources, labour, knowledge and information—are constantly changing. Hayek himself developed this insight further in his book, The Pure Theory of Capital.[2]

The Austrian School is characterised by its non-mathematical descriptive and analytical approach to economics. Menger himself was particularly interested in developing an organic social theory, although he was highly critical of the use of analogy to explain society. The methods and laws of anatomy and physiology he regarded as inappropriate. A cell in a finger always remains that, whereas a human being can change his profession and place of habitation. Thus while a biological organism is a spontaneous order, it is different to society. He also criticised the reductionist tendency of many political philosophers and economists who try to explain everything in terms of one sentiment.

> For along with self-interest, which at most can be recognized as the mainspring of human economy, also public spirit, love of fellow men, custom, feeling for justice, and other similar factors determine man's economic actions.[3]

What should be studied is society itself. Models and analogies are only aids to that study. The problem comes when people try to impose the model on society and make society conform to the model, instead of the model to society. The profound question which he posed and towards which he thought the social sciences should be directed was:

> How can it be that institutions which serve the common welfare and are extremely significant for its development come into being without a common will directed towards establishing them?[4]

Whereas some social institutions are clearly the result of purposeful design, it does not make sense to say that language, law or even the state are the purposeful result of activity on behalf of the community to establish them. So Menger tries to discover a natural origin for them in a similar way to that of David Hume. I shall review his accounts of the origins of localities, money and law.

a. The development of localities

Although in the "civilized", i.e. planned world, new localities rarely arise unintentionally, in the past this was the normal way. The first people to settle in a new locality, the first farmers, craftsmen shop keepers, and teachers have only their own *individual* interest in view. They go to a place and settle where they think it will be to their advantage. As the community develops, others

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[1] Richard M. Ebling, introduction to Money, Method, and the Market Process, by Ludwig von Mises (Norwell, Ma.: Kluwer Academic Publishers, 1990), xi.
[2] Friedrich A. Hayek, The Pure Theory of Capital (Chicago: University of Chicago Press, 1941), 21f.
[3] Carl Menger, Investigations into the Method of the Social Sciences with Special Reference to Economics (New York: New York University Press, 1985), 84.
[4] Ibid., 146.

find it advantageous to join, establishing new professions, crafts, and developing old ones in new ways. The community gradually grows and,

> . . . there gradually comes into being an organisation which is in a high degree of benefit to the interests of the members of the community. Indeed, their normal existence finally could not be imagined without it. Yet this organisation is by no means the result of the activation of the common will directed toward its establishment.[1]

It is manifestly not the result of a common will directed towards its establishment. Thus Menger concludes, the location of markets, professions, division of labour, trade and customs,

> . . . are nothing but institutions which most eminently serve the interests of the common good and whose origin seems at first glance to be based necessarily on agreement or state power. They are, however, not the result of agreement, contract, law or special consideration of the public interest by individuals, but the result of efforts serving individual interests.[2]

Later these natural organic institutions are reorganized and affected by purposeful activity of public powers. After a while people can no longer conceive of anything of value to the community coming about naturally and spontaneously. Everything becomes subject to planning and authority.

b. The origin of money

Now that in most countries money is issued by the government or at least by institutions established by and with the authority of the state, people have forgotten how money originated. Plato said money was an agreed-upon token for barter in the state purposely established,[3] and Aristotle, while recognizing that money is called *nomisma* because it exists by custom (*nomos*), also thinks that it is a standard established by agreement and by law.[4]

It is true that some wares have been declared money at different times by law. However this is usually just the acknowledgement of an item which had already become money. The problem, Menger says, is to show how in a primeval state, certain goods come to be accepted by everyone without express agreement.

Initially people barter the goods which they have for goods that they want. The best goods to have are ones others want since these are the most easily bartered. So if a person cannot barter what he has for what he wants, he will instead try to barter it for something more easily bartered than what he already has. Through this exchange he is brought closer to his ultimate goal. As Menger describes it so well, the

> . . . economic interest of the economic individuals, therefore, with increased knowledge of their individual interests, without any agreement, without legislative compulsion, even without consideration of the public interest, leads them to turn over their wares for more marketable ones, even if they do not need the latter for their immediate consumer needs . . . under the powerful influence of custom . . . a

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[1]Ibid., 156.
[2]Ibid., 157.
[3]Plato, <u>The Republic</u>, vol. 1, trans. Paul Shorey (Cambridge: Harvard University Press, 1937), 155.
[4]Aristotle, <u>Nicomachean Ethics</u>, trans. H. Rackham (Cambridge: Harvard University Press, 1934), 285-87.

certain number of goods are accepted in exchange by everybody. These are with respect to time and place the most marketable, the most easily transported, the most durable, the most easily divisible. They can, therefore, be exchanged for any other item. They are goods which are predecessors called *Geld*, from *gelten*, i.e., to perform, to "pay."[1]

In this custom is very significant. Indeed, the "value" of our own paper money rests only on the subjective confidence of those that use it. It is a convention that a piece of paper has value. A loss of confidence because of inflation (government counterfeiting), sends people to invest in more stable and traditional commodities such as gold. Ultimately money is the unintended result and unplanned outcome of specifically individual efforts of members of a society.

c. The origin of law

While it is not difficult to explain the origin of laws which are the result of the will of a ruler or an organised national community, it is much more difficult to elucidate the way in which laws, not the product of positive legislation, come to be. Since they obviously came into existence before recorded history, Menger suggests the only way is to,

> . . . examine what tendencies of general human nature and what external conditions are apt to lead to the phenomenon common to all nations which we call law.[2]

Thus a theoretical understanding can be developed.

In primitive circumstances people recognize the need to limit the power of despotism. They feel very keenly not just violence, but also the threat of it, which leads to insecurity. The weak feel this especially, but so do also the strong, who wish to conserve what they have gained. This conviction of the need to limit despotism arose originally "in the minds of individual members of the population." Each individual is clearly aware of what was in his interest and eventually all, or most people, come to the same realisation, so that "what benefits all is gradually recognized by all." All can agree on the content, if not the form, of the rules which should be observed. Each is clearly benefited by observation of the rules by others. "At the same time everyone is threatened by violations of these rules. The protection of what everyone recognizes as *his* interest becomes the interest of every individual." The rules are supported by the conviction of the community and have the purpose of limiting the individual arbitrariness of members of that community. To enforce these rules an authority is established to expiate the law when it is broken. Gradually in the minds of the population a closer solidarity and awareness evolves as well as a higher unity expressed through an organisation. A sense of common interest develops, and laws which are directed towards the protection of the community are added, though again, not necessarily as the result of conscious deliberation.

Initially these laws are subjective, the result of experience, a matter of conviction and insight. Later generations, who did not themselves experience the development of this law but just

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[1]Menger, 154.
[2]Ibid., 224.

inherited it from their forefathers, gradually developed the notion that the laws were objective and divinely given, that they were the product of a "higher wisdom."

This "pious error" changed peoples' perception of and relationship to the law so that,

> . . . it no longer appears before the minds of the population as something they experienced, as the expression of *their* insight and *their* conviction, as something *subjective*. Rather, it appears as something independent, offered to them from outside, something *objective*.[1]

This is similar to the cutting off from the life-world which Edmund Husserl recognized was at the root of the crisis of European science and hence European civilization. What is and should continue to be rooted in experience becomes abstracted and takes on a life of its own. Then based on reason alone, anything can be justified. This made the future corruption of the law easier as it came to be identified with authority.

Menger also recognized that as well as spontaneously originated laws there were "laws" imposed by someone in authority. Really these so-called laws are "statutes", commands and directives, but their giver likes them to have sanctity of law. Often their historical origin is in the limits imposed by a victor on the vanquished. They are imposed rules to which subjects submitted to out of fear. This has led to the habit of obedience and subjection until people, because of habit, can no longer distinguish,

> . . . those rules limiting the discretion of the individual which are produced by the convictions of the nation from those which power prescribes for the weak.[2]

At the same time,

> All institutions which sanctify law, even philosophical systems which "objectify" it or describe it as something "above human wisdom," always benefit power.[3]

As civilization advances, some people, jurists, specialize in knowledge of the laws. But since such people tend to be of a rationalistic bent, the law becomes more theoretical and jurists develop a lack of understanding for the wisdom of the common law, which is a tacit knowledge, or even a feeling for it. Also the advance of the State organisation means that law comes under State control. The common will becomes organised. New philosophies such as Hobbes <u>Leviathan</u> are propounded to enhance and legitimize the State, and to make it seem to be the source of order. This view was treated rather disparagingly by the great Spanish social philosopher Ortega y Gasset:

> . . . the idea of society as a contractual, and therefore juridical, union is one of the silliest attempts to put the cart before the horse. For law, law the reality—not the idea of law in the minds of philosophers, jurists, or demagogues—is nothing, to use a rather baroque phrase, but the spontaneous secretion of society.[4]

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[1]Ibid., 228.
[2]Ibid., 229.
[3]Ibid., 229-30.
[4]Jose Ortega y Gasset, "Unity and Diversity of Europe," in <u>History as a System and Other Essays Toward a Philosophy of History</u> (New York: Norton, 1941), 50.

However where the state law leaves a gap, common law continues to develop. But eventually,

> . . . rulers and jurists joined hands to replace the common law which arose *from* the nation and *for* the nation with one which was to serve the rulers![1]

It is true that sometimes common law is not in the common interest after a period of time, and needs to be amended possibly by positive legislation. However this should come about through thoughtful evaluation and insight and not hasty reforms.

So money, the law and many other institutions which are the basis of the social order,

> . . . serve common welfare of society, indeed cause it, without being regularly the result of an intention of society directed toward advancing this welfare[2].

They are all examples of the spontaneous origin of the rules of society which are adapted because they work and correspond to people's sense of justice and fairness, and of the spontaneous origin of institutions which can arise within that framework of rules.

4. Common Law

Some may find the notion that law is an example of a self-generated order absurd, so I will give a brief account of the common law as it developed in England. Unlike Roman law, an account of common law cannot be given without going into the details of its history. In that sense, the only adequate account is a narrative, as Alasdair MacIntyre would say. However, owing to lack of space and relevance, I will keep the account to an explanation of what common law is and what it is not.

Common law has its origins in the traditions and customs of the Germanic tribes who invaded Britain in the fifth century. The rest of Europe eventually adopted Roman Law and its modern successor, the Napoleonic Code.

> The common law is not a written code. It is unlike the civil law set forth in Justinian's *Corpus Juris Civilis*. . . . The principles of common law have always eluded complete embodiment in any code or collection of writings. Judicial decisions recorded on the plea rolls of common law, and . . . learned treatises . . . may all express the principles of the common law, but these writings never comprise its totality . . . [Such] writings will merely reveal the principle. The principle can exist, without writing, in the form of a generally accepted tradition.[3]

Furthermore since it is of a general nature, the common law is not the law of special interest groups. They are general rules, since whatever "smacks of speciality" is not common law.

Instead, common law is a body of general rules prescribing social conduct, which apply throughout the realm except where local customs are known to apply. The law applies to everyone including agencies of the government. "*Lex, Rex*" was the battle cry of many rebellions against arbitrary royal rule.[4] The way in which these laws came into being was described by Maitland as a

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[1]Menger, 232.
[2]Ibid., 156.
[3]Arthur Hogue, <u>The Origins of the Common Law</u> (Indiana: Indiana University Press, 1966; reprinted, Indianapolis: Liberty Press, 1985), 186-87.
[4]Hayek, <u>The Constitution of Liberty</u>, 167-71.

three stage progression. The "common wisdom and experience of society" would become "established customs," which at some point would receive "judicial sanction in courts of last resort."[1] William Blackstone, the great common law jurist, described the source of authority for the law as "immemorial usage".

Thus it is in no way the product of deliberate design. Parts of the common law are irrational, and for this reason incomprehensible to jurists trained in Roman law. The common law in a sense the people's law. It has its authority in the life, customs and traditions of the people. Thus the cases used to illustrate and describe the principles of common law are all concrete situations. These precedents are not made by the application of abstract justice but by known rules. The law is discovered. It is not made. The rules exist because they are followed, not because they have been designed and imposed. Therefore they change over time as custom changes. This background influenced the ideas of the Scottish Moralists.

A contemporary example, of change in the common law occured in England last year when the Law Lords (the highest court) ruled that a husband could be said to rape his wife (and thus be prosecuted). Before this it was, in principle, not possible to rape one's wife, and there existed no such crime. This change, if slow in coming, reflected the change in the customs and values of modern society. The change reflected the change in society. It was not a law enacted to change society, as feminists and others might have wanted. The basis for the change was not a rational discourse on abstract human rights such as equality (which are, more than anything else, culturally conditioned), but a perceptible evolution of social custom and expectation. It was not a change wrought by the legislature either. The law had changed and the court was merely recognizing this change publicly.

So not only can spontaneous order be the source of the subtlest institutions in society it actually is. And given the chance would enable a creative response to change and new circumstances. The problem with imposed order and statute is that they elevate and set in concrete the wisdom of the day. They close the door to innovation. A classic example is the state of the American public school system and British state school system. Charles Murray has shown how in theory and practice a far richer (intellectually and morally, as well as financially) and better school system could have arisen (in fact did arise, until snuffed out by state intervention) and developed spontaneously.[2]

5. Michael Polanyi

Michael Polanyi described the "Republic of Science", and showed how this community functioned as a spontaneous order. He compared it to the type of process involved in solving a jigsaw puzzle. If we had a large jigsaw puzzle that had to be put together in a hurry, we would engage a number of helpers. The problem is, how should they be best employed. One way would be to share the pieces out between the helpers, a method appropriate for a number of women shelling peas. However it would not work in this case, since there is no guarantee that each helper has pieces that would fit together. Another would be to make each responsible for a particular area.

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[1] Hogue, 190.
[2] Charles Murray, In Pursuit of Happiness and Good Government (New York: Simon and Schuster, 1988), part 3.

However the most effective way for them to cooperate is for them all to work simultaneously on the puzzle in sight of the others, so that every time a piece was fitted by one of them, all the others could see what step became possible as a consequence. Each would be acting on his own initiative, responding to the latest achievements of others such that,

> . . . a series of independent initiatives are organised to a joint achievement by mutually adjusting themselves at every successive stage to the situation created by all the others who are acting likewise. Such self-co-ordination of independent initiatives leads to a joint result which is unpremeditated by any of those who bring it about. Their co-ordination is guided as by 'an invisible hand' towards the joint discovery of a hidden system of things. . . . Any attempt to organise the group of helpers under a single authority would eliminate their independent initiatives and thus reduce their joint effectiveness to that single person directing from the centre. It would, in effect, paralyse their co-operation.[1]

Polanyi extends the analogy to explain how the advancement of science comes about not through planning but through the "self-co-ordinated community" of scientists. This coordination takes place through mutual adjustment based on taking note of the published results of other scientists. Professional associations are established, various journals initiated, institutes founded and conversations had. The publishing process itself is self-evaluating. Scientists evaluate and judge the work of those in their own and adjoining areas of expertise. There is no single scientist who is able to evaluate all the areas of scientific research. Thus scientific opinion is not that of any one person, but of the agreement and valuations made by overlapping networks and fields.

> Through these overlapping neighbourhoods uniform standards of scientific merit will prevail over the entire range of science, all the way from astronomy to medicine. This network is the seat of scientific opinion.[2]

Polanyi goes on to show that the attempt to guide science towards fulfilling a particular purpose will paralyse it, since it cannot be known today what will become known tomorrow.[3] And the relevance of what is known today may not be known until the day after tomorrow. As an example he cites the discovery of relativity by Einstein in 1905. It was nearly 40 years before any technical application of the relativistic equation $e=mc^2$ could be thought of. Creativity requires freedom, which means the lack of control so that a person can follow his own lights. Scientists thus,

> . . . affirm by implication the prescience of a spontaneous coordination of independent creative impulses in science. . . . Those who deny such metaphysical beliefs and repudiate such transcendent obligations deny by logical implication also the possibility of both self-coordination and freedom in science.[4]

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[1]Michael Polanyi, "The Republic of Science: Its Political and Economic Theory," in <u>Knowing and Being</u> (Chicago: University of Chicago Press, 1969), 51.

[2]Ibid., 56.

[3]This view was disputed by Alvin Weinberg who advocated a planned republic of Big Science. He admitted his vision owed much to Marx. As might be expected in view of the epistemological problems outlined above, the waste of resources in planned science is legendary. Alvin M. Weinberg, "Values in Science: Unity as a Value of Pure Science," <u>Centripetal Forces in the Sciences</u>, vol. 2, ed. Gerard Radnitzky (New York: Paragon House, 1988), 8.

[4]Michael Polanyi, "The Foundations of Freedom in Science," in <u>Symposium on Physical Science and Human Values</u>, ed. K.K. Darrow (Princeton: Princeton University Press, 1947), 129.
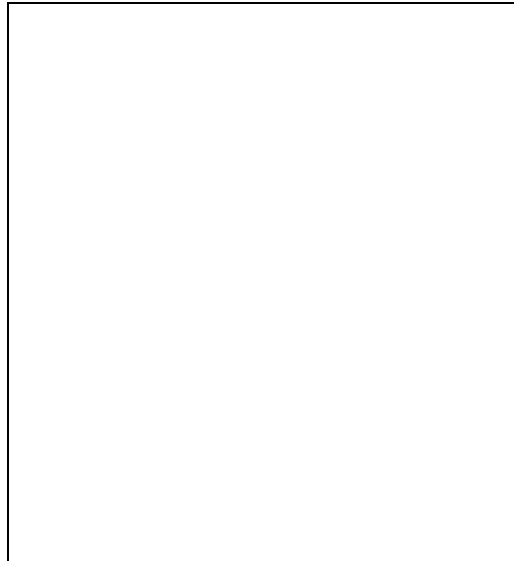
Figure 2. Hierarchical control

Polanyi expands his analogy to that of the functioning of civil society and the market in particular, which is an example of self-co-ordination by mutual adjustment guided by the price of goods.

Polanyi described the control found in such a process as having a polycentric nature. This can be compared to chaining control such as when A -> B -> C -> D -> E. If there is a disruption in the chain at any point it is broken and nothing further happens. In a hierarchy in contrast, a break lower down would disrupt only part of a sequence. Now, in a polycentric order, the complexity of relatedness increases as the number of nodes increases.

Figure 3. Polycentric control

Therefore disruption at any single point will have minimal consequences. In the brain there are 5×10^{11} neurons interconnecting with each other. The degree of complexity is out of all proportion to anything else in the universe. There is no homunculus inside, pulling levers as some old drawings used to show. Nor is there a master neuron, or pineal gland, or any first cause as such, which is what people usually look for. This is why the brain is able to carry out many operations at

the same time. We can play a game of tennis while engaging in polite conversation and thinking about a difficult problem all at the same time, not to mention all the bodily functions that are being supervised unconsciously.

This insight that the mind is not to be conceived as a hierarchical structure was further developed by Hayek in his first and very original application of the notion of spontaneous order.[1] Hayek, as has already been mentioned, conceived of the mind as being governed by processes of rules. He argued against Kant and the rationalists, and tried to correct and update the empiricism of Hume. In critique of Hume he argued that human knowledge cannot be based on rudimentary sense-impressions, since the notion of such a primordial sense-datum devoid of theoretical content is incoherent. This is similar to Popper's notion of the hypothetico-deductive method. Hayek continues by showing that Kant also was not able to solve the problem of providing a correct description of the epistemological process.

> Hayek reasons that our perceptions come to us already processed and ordered by our minds and are always informed by the categories and theories which we inherit from our evolutionary forbearers, and which are embodied in our nervous systems . . . unlike Kant he does not suppose that the *a priori* categories which form the structure of the human mind are immutable or invariant. Instead these categories are understood as variable, adaptations of the human organism to its evolutionary environment, and none of them is fixed or unalterable.[2]

This work of Hayek was originally written in the twenties, published in the fifties, but has as yet not received the attention it deserves. Hayek himself referred to it as his most original but least understood work.[3]

6. Friedrich von Hayek

Friedrich von Hayek (1899-1992) was the greatest exponent of the Austrian school of economics. He was involved in a major debate with Keynes in the thirties which forced the latter to radically modify his views. However he entered the wilderness after the publication of his book The Road to Serfdom in 1944, which showed the basic identity between international and national socialism, and argued that the progressive social policies then being advocated in all countries were a slippery road to totalitarianism. As his pioneering work received recognition he was belatedly awarded the Nobel prize in economics in 1974, named a Companion of Honour by Queen Elizabeth and was only the second recipient of the Founder's Award presented by Sun Myung Moon in 1988 at the International Conference on the Unity of the Sciences.[4]

Hayek's writings on order are inseparable from his wider political interests. So before discussing his understanding of spontaneous order I will first recount his views on freedom and law. Hayek as mentioned, before distinguishes clearly between two types of freedom, law and

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[1]F.A. Hayek, The Sensory Order (London: R.K.P., 1952).
[2]John Gray, "The Idea of a Spontaneous order and the Unity of Sciences," in Centripetal Forces in the Sciences, vol. 1, 238-39.
[3]Interestingly, Hayek's epistemological view, although devoid of metaphysics, is similar to that of Unificationism, in which the categories for cognition exist only as prototypes, and develop through give and take action with the environment.
[4]Hayek was an agnostic for whom the word God had no meaning. However in the final chapter of his final book he emphasised the value of religion and concluded that the future of civilization depended on whether people believed in a personal Will or whether they committed idolatry by finding this will instead in 'society'. The Fatal Conceit, 139-40.

order. One we already looked at. The other is the classical view traceable to Pericles, Aquinas, Locke, and Hume.

The freedom which Hayek regards as the correct understanding is to be free of the arbitrary will of another.[1] John Locke explained that freedom of men under government,

> . . . is to have a standing Rule to live by, common to every one of that Society, and made by the Legislative Power erected in it; A Liberty to follow my own Will in all things, where the Rule prescribes not; and not to be subject to the inconstant, uncertain, unknown, Arbitrary Will of another Man.[2]

This does not imply that a person can do anything he chooses, since the boundaries of action are set by the rules of just conduct, which are abstract. Since these rules are general and do not name particular people, the coercion exerted to enforce them is not arbitrary. This is related to the notion that human behaviour is best understood as rule-governed.[3]

Also freedom requires that,

> . . . the individual has both the opportunity and the burden of choice; it also means that he must bear the consequences of his actions and will receive praise or blame for them. Liberty and responsibility are inseparable,[4]

The denial of responsibility so common today is due to a fear of responsibility and thus a fear of freedom. This is why people abdicate responsibility for their life and surrender their freedom to the state. Security that comes with maintaining the status quo is more highly valued than the responsibility that comes with freedom. A free society is a dynamic one in which there is the freedom, or indeed the necessity to create and develop.

Law is not regarded as an infringement of liberty, but as the means whereby liberty is preserved. Locke's classic statement on the relationship between freedom and law explains that,

> . . . *the end of Law* is, not to abolish or restrain, but *to preserve and enlarge Freedom*. For in all the states of created beings capable of Laws, *where there is no Law there is no Freedom*. For *Liberty* is to be free from restraint and violence from others which cannot be, where there is no Law: But Freedom is not, as we are told, *A Liberty for every Man to do what he lists*. (For who could be free, when every Man's Humour might domineer over him?) But a *Liberty* to dispose, and order as he lists, his Person, Actions, Possessions, and his whole Property, within the Allowance of those Laws under which he is; and therein not to be subject of the arbitrary Will of another, but freely follow his own.[5]

This understanding of freedom is similar to that in Unificationism in which freedom is inseparable from responsibility and exists only within the Principle as applied to human relationships.

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[1]F.A. Hayek, The Constitution of Liberty, 12.
[2]John Locke, "The Second Treatise on Government," in Two Treatises on Government, 2d ed., ed. Peter Laslett (Cambridge: Cambridge University Press, 1970), 302.
[3]Peter Winch, The Idea of a Social Science and its Relation to Philosophy (London: R.K.P., 1958), 52.
[4]Hayek, Constitution of Liberty, 71.
[5]John Locke, 324.

Although laws originated as a spontaneous order, as we have seen the authority to promulgate laws was later taken over by the State. However the medieval view remained that,

> . . . the state cannot of itself create or make law, and of course as little abolish or violate law, because this would mean to abolish justice itself, it would be absurd, a sin, a rebellion against God who alone creates law.[1]

Because governments now issue "laws", Hayek clearly describes the attributes of true law so that they may be distinguished from arbitrary commands of the state. The problem is that,

> The great majority of so-called laws are rather instructions issued by the state to its servants concerning the manner in which they are to direct the apparatus of government and the means which are at their disposal. Today it is everywhere the task of the same legislature to direct the use of these means and to lay down the rules which the ordinary citizen must observe.[2]

Thus frequently people, who are described as criminals, are merely those who have not obeyed the government. A free society used to be characterized as one in which a person need not seek anyone's permission nor obey anyone's orders as long as he kept within the bounds of known law. True laws have certain attributes.[3]

The first is that they must always be prospective and never retrospective. This is not a law itself but a meta-legal rule to determine if a law is valid or not. Another is that there are no victimless crimes and another, "*nullum crimen, nulla poena sine lege*." The second is that they should be known and certain. This does mean that they be written down, but that the court will treat a certain action in a predictable way. The third is that of equality. The law should be general and abstract, applying equally to all the members of society, including the government and its officers. It should not single out in particular individuals or groups, unless there is a consensus among both the group and other people that there should be exceptions. No one should be *privileged*, that is above the law. This does not hold in modern societies where legislators frequently pass legislation in which a clause exempts them from the force of that legislation. Thus much of the activity of modern government while technically legal is actually unlawful.

Hayek in his discussion of spontaneous order, does not draw a clear distinction between the evolution and structure of spontaneous order.[4] Thus while his description of the evolution of spontaneous order has been regarded as rather too optimistic, the discussion of the structure of spontaneous order is very insightful.

As mentioned before, Hayek defines order as,

> . . . a state of affairs in which a multiplicity of elements of various kinds are so related to each other that we may learn from our acquaintance with some spatial or

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[1]Hayek, The Constitution of Liberty, 163.
[2]Ibid., 207.
[3]Ibid., 207-10.
[4]Angelo M. Petroni, "Note on Hayek's Theory," in Organisation and Change in Complex Systems, ed. Marcelo Alonso (New York: Paragon House, 1990), 201.

temporal part of the whole to form correct expectations concerning the rest, or at least expectations which have a good chance of proving correct.[1]

He distinguishes between two sources of order, made order and grown order. The former is exogenous, an artificial order, an organisation which is deliberately created to serve the purpose of the maker. It is relatively simple, or at least no more complex than the maker can conceive and survey, concrete in that its existence is easily perceived, and, like a bureaucracy is hierarchical and command-based. The latter is endogenous, a spontaneous order, which has evolved, and, because it was not made, has no particular purpose other than enabling the successful pursuit of a great variety of different purposes by its constituents. Its degree of complexity is not limited to what a human mind can master, and it is often of an abstract character. It is abstract in the sense that there appears to be no order because there is no one in overall charge. The abstract relations on which the order is based have to be mentally reconstructed.[2] The order often consists of a system of abstract relations between elements which may also be defined abstractly. The elements themselves may be changed and the order may remain.

The most important point for Hayek is that a spontaneous order, because it was not created by an outside agency, can have no purpose. However he concedes that,

> . . . in a different sense it may well be said that the order rests on the purposive action of its elements, when 'purpose' would, of course, mean nothing more than that their actions tend to secure the preservation or restoration of that order. The use of 'purposive' in this sense . . . is unobjectionable so long as we do not imply an awareness of purpose of the part of the elements, but mean merely that the elements have acquired regularities of conduct conducive to the maintenance of the order.[3]

As we shall see, Unificationism attributes to every being both a purpose for the individual (*hyungsang*) and a purpose for the whole (*sungsang*). The purpose of a being is determined by the creator.[4] However spontaneous orders, by definition, do not have a creator. Still, in the terms Hayek uses, the elements in the order pursue their own purposes, which are individual purposes, but by behaving in a proper way, are fulfilling the purpose for the whole, even if unconsciously.

Spontaneous orders can be so complex because they result,

> . . . from individual elements adapting themselves to circumstances which directly affect only some of them, and which in their totality need not be known to anyone.[5]

Thus it is not possible to deliberately arrange such an order, in part because of the epistemic problem, and in part because the elements decide autonomously how to respond to the circumstances. Spontaneous orders are far more complex than could be achieved by deliberate arrangement, because each element is able to utilize knowledge that is unknown and unknowable to a central organiser. Thus one can to some extent change the circumstances and thus the general

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[1]Hayek, Rules and Order, 36.
[2]Ibid., 38.
[3]Ibid., 39.
[4]Chung Hwan Kwak, Outline of the Principle: Level 4 (New York: H.S.A.U.W.C., 1980), 23.
[5]Hayek, Rules and Order, 41.

shape, but the particulars can never be known or determined. Any attempt to control or even deliberately coordinate such elements will have the effect of upsetting the overall order, because that would be a change in the circumstances which the other elements take into consideration. It will also impede the forces which produce the spontaneous order.

Spontaneous orders result from their elements obeying certain rules of conduct. They do not result from them obeying commands. These rules are not necessarily known to the elements which follow them. The micromagnets mentioned above do not know the rules they follow. Individuals also follow rules they do not know, for example in their use of language. Thus the rules exist, but are as likely to be implicit as explicit. Animals follow rules they cannot articulate, as has man obeyed laws for hundreds of thousands of years before he could articulate them.

Obviously not all rules will enable the development of a spontaneous order. A rule that people should kill any individual they encountered would hardly be compatible with society. Thus society exists because the rules that are followed, have been selected because they lead individuals to behave in a manner which makes social life possible. Thus the orderliness of society is largely due to growth or evolution in which,

> . . . practices which had at first been adopted for other reasons, or even purely
> accidentally, were preserved because they enabled the group in which they had
> arisen to prevail over others.[1]

These rules and practices need not be written down. If they are passed on through custom they remain far more flexible and adaptable than if they are written down. Written law is a clumsy and blunt tool for the control of human behaviour, apart from which it easily becomes outdated and stultifying. People who find it such try to find loop-holes in the law and thus become criminalised. Hayek would agree with Michael Oakshott's view that custom by comparison is,

> . . . always adaptable and susceptible to the *nuance* of the situation. This may appear
> a paradoxical assertion; custom we have been taught, is blind. It is, however, an
> insidious piece of misobservation; custom is not blind, it is only 'blind as a bat'. And
> anyone who has studied a tradition of customary behaviour (or a tradition of any
> other sort) knows that both rigidity and instability are foreign to its character. And
> secondly, this form of the moral life is capable of change as well as of local
> variation. Indeed, no traditional way of behaviour, no traditional skill, ever
> remained fixed; its history is one of continuous change.[2]

This is why Hayek suggested that,

> Man has certainly more often learnt to do the right thing without comprehending
> why it was the right thing, and he still is often served better by custom than
> understanding. Tradition is not something constant but the product of a process of
> selection guided not by reason but by success. It changes but can rarely be
> deliberately changed. Cultural selection is not a rational process; it is not guided by
> but it creates reason . . . [Therefore] . . . since we owe the order of our society to a

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[1]Ibid., 9.
[2]Michael Oakshott, "The Tower of Babel" <u>Cambridge Journal</u>, vol. 2, quoted in Winch, 62-63.

tradition of rules which we only imperfectly understand, *all progress must be based on tradition.* We must build on tradition and can only tinker with its products.[1]

Rules themselves may be the result of spontaneous order but need not be. A spontaneous order can arise based on rules which have been deliberately designed with the purpose of allowing such a spontaneous order to develop. However the precise shape the spontaneous order will take is unknowable because it depends on how the elements respond to circumstances. A spontaneous order will also develop even when the rules have been formulated to prevent the spontaneous order arising. This is best illustrated by the black market which springs up, and has its own unwritten, spontaneously derived rules.

Within society, in order to achieve a certain goal people collaborate by setting up organisations. These are the most powerful and effective bodies to coordinate the achievement of a goal. However the relations between such organisations and individuals and other groups in society, relies on the forces of spontaneous order, while in a business, the mangers coordinate and supervise the organisation. However there is no higher body or organisation which directs and coordinates the relationship between this company, its suppliers, and customers. Government does not do it. It happens spontaneously. When government tries to coordinate and regulate the economy the result is the break down of the spontaneous order. Thus society is made up of both individuals, families, farms, firms, plants, corporations, institutions, associations, and public institutions such as government. These, including government, are all integrated into a spontaneous order more comprehensive than any one of them. Within this overall spontaneous order there will be many spontaneous sub-orders and much overlap between them and the other groups in society.

Government, of course, occupies a special place in the spontaneous order. It is the institution charged with enforcing the rules of just conduct upon which the order depends. This and defence of the country are the two original and most important functions of government. To protect the spontaneous order, the freedom that goes with it and the people, government is given a monopoly of legitimate coercion. The army is to defend the country from external enemies, and the police force is to protect people from internal enemies such as burglars and murderers. Within society the government should be an umpire. It should not be the law-making body though, or it ends up playing the game and making up the rules so that it wins. The functions of legislation and government are different. Government should be under the rule of law. If government makes the laws it cannot be. Hayek expounds this at length in his critique of how in liberal democracies government has grown unrestrained by the original vision. In essence the problem with present democracies, including Britain and the United States, is that there is a separation of powers but not a separation of functions.[2]

It is impossible for any but the simplest types of organisations to be governed by a single mind. Indeed any sensible organiser wants to be able to utilize the knowledge that exists in minds other than his own.

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[1]Hayek, "The Three Sources of Human Values," in <u>Law, Legislation and Liberty</u>, 166-67.
[2]F.A. Hayek, <u>Law, Legislation and Liberty</u>, vol. 3, <u>The Political Order of a Free People</u> (London: R.K.P. 1982).

If anyone did succeed in fully organising a [complex society], it would no longer make use of many minds but would be altogether dependent on one mind; it would certainly not be very complex but extremely primitive—and so would soon be the mind whose knowledge and will determined everything. The facts which could enter into the design of such an order could be only those which were known and digested by this mind; and as only he could decide on action and thus gain experience, there would be none of that interplay of many minds in which alone mind can grow.[1]

Hayek distinguishes between the rules of spontaneous orders and the rules of organisations. The latter will, of course, rely to some extent on rules as well as on commands by giving its members discretion so as to maximize their skills and knowledge. Indeed, the more complex an order, the more decentralised it becomes, and the more it comes to rely not on commands but on rules. However, the rules which govern action within an organisation are rules for the performance of assigned tasks.

They presuppose that the place of each individual in a fixed structure is determined by command and that the rules each individual must obey depend on the place which he has been assigned and on the particular ends which have been indicated for him by the commanding authority.[2]

Such rules deal with the details of actions to be performed and as such are subsidiary to the commands which provide the overall direction. Rules are specific to particular functions and thus to particular individuals within the organisation. The rules are interpreted in light of the command and the command in terms of the rules. The rules by themselves though, would not be enough to tell an individual what he should do.

The rules governing a spontaneous order by contrast,

. . . must be independent of purpose and be the same, if not necessarily for all members, at least for whole classes of members not individually designated by name. They must . . be rules applicable to an unknown and indeterminable number of persons and instances. They will have to be applied by the individuals in the light of their respective knowledge and purposes; and their application will be independent of any common purpose, which the individual need not even know.[3]

Unlike the rules of organisation, or commands, the rules of spontaneous orders do not presuppose a person has issued it. Because modern society grew as a spontaneous order it was able to attain a degree of complexity which far exceeds what could have been achieved by deliberate organisation. In fact,

We have never designed our economic system. We were not intelligent enough for that.[4]

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[1]Hayek, Rules and Order, 49.
[2]Ibid., 49.
[3]Ibid., 50.
[4]Hayek, "The Three Sources of Human Values," 164.

Therefore the argument that the complexity of modern society requires increasing government involve-ment and deliberate planning is based on a complete misunderstanding of the nature of society. What is required is the enforcing and improvement of existing rules rather than their violation in the name of social justice or some other ideal. A spontaneous order arises from the balancing by the elements of the various factors operating on it. If government intervenes in the market order it upsets this balance and the result is almost always the worsening of the problem it allegedly was trying to cure.

The market order is a special type of spontaneous order to which Hayek has given the name *catallaxy*, from the Greek *katallattein,* which means not only 'to exchange' but also 'to admit into community' and 'to change from enemy to friend'.[1] The term economy properly applies to a household. A national economy is thus really a network of many interlaced economies. A catallaxy is therefore a,

> . . . special kind of spontaneous order produced by the market through people acting within the rules of the law of property, tort and contract.[2]

The origins of this catallaxy are as described by Hume and Menger. Because of it people found that they could live together in peace and mutual benefit without agreeing about the different and particular aims which they severally pursued. Each could benefit from the skills and knowledge of others whom he did not know, and whose aims might have been completely different from his own. Thus different people may have different uses for different things. But through barter and exchange both individuals who have different purposes can interact and benefit. Thus whereas collaboration,

> . . . presupposes common purposes, people with different aims are necessarily enemies who may fight each other for the same means; only the introduction of barter made it possible for the different individuals to be of use to each other without agreeing on the ultimate ends.[3]

The restriction of coercion to the negative rules of just conduct made it possible for the peaceful integration of people who were thus left to pursue in freedom their own interests. The desire to force the whole of society to follow a common aim, and to have a common purpose has been behind two of the greatest threats to civilization: nationalism and socialism. In each the members of the population are coerced into fulfilling purposes which are not of their own choosing because the government claims to know what is best for the country.

The Great Society then is held together not by a common purpose but by relationships operating within the framework of shared values. Hayek isolates economic relations as the chief ones, since the values identified by David Hume are the most general and basic.

> Gift-giving and give-and-take relationships . . . were the mechanisms that made it possible to *extend* social bondings beyond the family. . . . Trade made intergroup contacts possible.[4]

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[1]Hayek, <u>The Mirage of Social Justice</u>, 108.
[2]Ibid., 109.
[3]Ibid., 110.
[4]Radnitzky, 168.

This is why the classical liberals argued for free trade. Apart from leading to co-prosperity, it would make the economy in each country interdependent and thus lessen the chances of war. It is indeed market relations which are responsible for much of the interchange of ideas, travel and interest in foreign lands. However he does recognize the importance of what Edmund Burke called the "little platoons", the voluntary associations which in the past were responsible for much that was good in society: sports, arts, sciences, welfare etc. However these are diminishing in importance as people expect the government to take charge of the provision of such things.[1]

Government policy, then, should not be guided by a desire to achieve a certain end-state or particular results. This way leads to the complete bureaucratization of society. Instead, policy should be directed to securing and maintaining,

> . . . an abstract overall order of such character that it will secure for the members the best chance of achieving their different and largely unknown particular ends . . . the goal of such a policy must be to provide a multi-purpose instrument which at no particular moment may be the best adapted to the particular circumstances, but which will be the best for the great variety of circumstances likely to occur. If we had known those particular circumstances in advance, we could probably have better equipped ourselves to deal with them; but since we do not know them beforehand, we must be content with a less specialized instrument which will allow us to cope even with very unlikely events. [2]

This sounds very much like the behaviour of the far-from-equilibrium systems and self-organized criticality looked at earlier. They too, were in the state they could most easily bifurcate from if necessary, so as to preserve the system. Trying to establish and maintain a status quo leads to ossification and finally the death of the system. The freedom and opportunity to innovate and change and adapt is vital. Attempting to make static what should be a dynamic system, namely the catallaxy will result in the cessation of creativity, progress and its eventual displacement by a more vital culture. The same is true, of course, in the life of the mind. Dogmatism is the absolutization of a relative truth or perspective. It prevents the pursuit of truth and its adaptation to changing circumstances. It is a reflection of the tribal mentality which cannot brook criticism of the tribal myth.[3]

The catallaxy functions like a game. There are rules to be observed and the best, in whatever sense, man wins. The market serves as both a discovery process and a selection mechanism. Be it the market of ideas or commodities it is wealth-creating because it makes available through the price mechanism information about supply and demand that could not otherwise be known.

Although there has been little discussion of Hayek's views on spontaneous order in the philosophical literature, political economists have taken it seriously. Oxford scholar John Gray finds several problems in Hayek's exposition of the spontaneous order.[4] First, unlike Darwinism,

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[1]Hayek, <u>Mirage of Social Justice</u>, 150-51.
[2]Ibid., 114-15.
[3]Radnitzky, 166.
[4]John Gray, "The Idea of a Spontaneous Order and the Unity of the Sciences," in <u>Centripetal Forces in the Sciences</u>, 241-42.

there is no clear single mechanism of natural selection which is analogous to the subjection of random mutation to environmental selection. This is a reductionist criticism. Human evolution, namely human history, is far more complex than that. There is no single mechanism, although several different ones have been suggested by historians. There are several ways in which one society becomes dominant. Sometimes it may be war, and not tidy competition in the market place. However the model of a spontaneous order is supposed to be a desirable ideal as well as a partial description of what does happen. Also, such a comparison with Darwinism is based on the scientistic fallacy of importing too directly theories from one science to another. The second criticism he makes, again in comparison to Darwinism, is the lack of any single definable unit of evolution comparable to the gene. But again, there are several units which are competing simultaneously, groups of different sizes, nations and cultures.

Another problem, or maybe paradox, is that the growth of the welfare state can be regarded as a spontaneous order in that it was not the result of a single deliberate plan. However it was the result of deliberate intervention in the market order which was allowed because of the failure of the constitution to prevent such arbitrary government intervention. That norms or social patterns which arise spontaneously are not necessarily optimal has been recognized.[1] However the value of a spontaneous order is that it is open ended and that existing arrangements can change and improve. When government intervenes, though, arrangements based on the current level of knowledge become universalised and set in concrete, as it were, and are very hard to change. It is not possible to experiment when the 'law' lays down the 'correct' way of doing something. Thus a heavily regulated economy and society is not able to adjust to future circumstances.

A further criticism Gray has is that sometimes spontaneous orders collapse.[2] It may be subject to endogenous disturbances, such as result from the Prisoner's Dilemma, in which actions previously done out of custom are no longer done, because they are not regarded as beneficial. Also they may be conquered and enslaved. There is no guarantee that the most productive system will prevail. The Great Depression was thought of as an example of such an endogenous collapse into chaos. This, however, can be better explained through ill-judged government intervention. Nevertheless it is possible for there to be self-reinforcing crises of confidence in the market order leading to its collapse into chaos. However, Gray is not, as he readily admits, familiar with the insights of modern science of order arising out of chaos. Nor are many scientists aware that they have been preempted by economists. Thus we find Jantsch advocating a liberal left political program. In the dissipative systems we examined above, at bifurcation points there is great instability before a jump to a new level of organisation and structure. In human society too the breakdown of the old order is followed by a new one. No society has been anarchic for very long.

Thus the spontaneous order is the only one which can successfully support a large population and is open-ended to the future, allowing progress and creativity. It is the only system which respects the dignity of human and other life, and allows man freedom and autonomy. It is

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[1]Radnitzky, 164.
[2]Ibid., 242-47.

holistic and historical, a grown order whose total knowledge and complexity is not graspable by any single individual or committee.

H. Philosophy

As discussed before, Greek philosophy has not been able to provide a way to analyse the notion of spontaneous order. The first philosophers who discussed the subject were the empiricists whose interest in metaphysics was wholly critical.

Recently though, there have been a number of philosophers who have tried to incorporate the insights of evolutionary theory into a new metaphysics. Notable among them have been Henri Bergson, Alfred North Whitehead and Teilhard de Chardin. British philosophy and theology was not so influenced or impressed by Whitehead as his ideas were not so unique as appeared in other countries. Evolution and notions of process had a long history in British philosophy and theology. The doctrine of God's immanence, which was very influential in part due to the Tractarianism, made it relatively easy for Christians to quickly come to terms with, and incorporate evolutionary theory into their theology.[1]

Whitehead was, as mentioned above, first a mathematician. Later he became interested in science and finally in theology. He analyzed the concepts of materialistic philosophy and showed that they were inadequate and could not account for the creativeness of evolution. All the

> . . . old foundations of scientific thought are becoming unintelligible. Time, space, matter, material, ether, electricity, mechanism, organism, configuration, structure, pattern, function, all require reinterpretation.[2]

In redefining them he proposed organic mechanism as a replacement for materialistic mechanism.[3] By organic he meant that the whole was more than the sum of the parts. By being a part of a whole the character of both is changed.

> The parts of the body are really portions of the environment of the total bodily event, but so related that their mutual aspects, each in the other, are peculiarly effective in modifying the pattern of either. This arises from the intimate character of the relation of whole to part . . . each to the modification of the other.[4]

Thus as mentioned before,

> . . . an electron within a living body is different from an electron outside it, by reason of the plan of the body. The electron blindly runs either within or without the body; but it runs within the body in accordance with its general character within the body; that is to say, in accordance with the general plan of the body, and this plan includes its mental state.[5]

At the same time Whitehead disavowed vitalism, which he regarded as a consequence of the doctrine of dualism. He developed a process philosophy which understood reality, and thus order,

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[1]Peacocke, 82-84.
[2]Alfred North Whitehead, <u>Science and the Modern World</u> (New York: Macmillan, 1950), 24.
[3]Ibid., 116.
[4]Ibid., 214.
[5]Ibid., 116.

in terms of wholes and parts. Thus it is a relational philosophy. However his definition of order is not very clear at all:

> No actual entity can rise beyond what the actual world as a datum from its standpoint—*its* actual world—allows it to be. Each such entity arises from the primary phase of the concrescence of objectifications which are in some respects settled: the basis of its experience is 'given'. Now the correlative of 'order' is 'disorder'. There can be no peculiar meaning in the notion of 'order' unless this contrast holds. Apart from it, 'order' must be synonymous with 'givenness'. But order means more than 'givenness', though it presupposes 'givenness', 'disorder' is also 'given'. Each actual entity requires a totality of 'givenness', and each totality of 'givenness' attains its measure of 'order'.[1]

No wonder Popper thought Whitehead had slid into irrationalism![2] Being as obtuse as Heraclitus is not a recommendation for the modern world, where woolly thinking has already resulted in several political and economic misfortunes. Nevertheless there are those who think Whitehead's philosophy can provide a framework for modern science.[3]

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[1]Alfred North Whitehead, <u>Process and Reality: An Essay in Cosmology</u> (New York: Free Press, 1969), 100.
[2]Popper, <u>Open Society</u>, vol. 2, 244-50.
[3]John B. Cobb and David R. Griffin, eds. <u>Mind in Nature: Essays on the Interface of Science and Philosophy</u> (Washington: University of America, 1977).

CHAPTER 5

UNIFICATIONISM AND ORDER

I. Introduction

From the above discussion it was clear that from within the categories of Greek classical philosophy it is not possible to explain spontaneous order. It is also clear that there is spontaneous order everywhere both in nature and in human society. At the same time those, like Hume, who had observed spontaneous order, were notoriously anti-metaphysical in outlook. Thus the rise of classical liberalism and evolutionary theory was accompanied by the decline in religious faith. Smith, Hume, Hayek and others provided a profound and largely correct understanding of economics, but a shallow and distorted account of human nature. They were also agnostic, uninterested in religion, or regarded it as non-rational. Thus there developed a large schism between liberal economics and theology. The Church, in Britain and elsewhere, was wedded to the thought patterns and structures of feudalism and was content to condemn the free market out of hand. Instead of giving moral and ethical guidance to businessmen and others it simply judged them for worshipping Mammon. Influenced too by the Newtonian world view, the church could not understand the notion of self-generating order. However, through nineteenth century apologetics' emphasis on God's immanence, an attempt was made to incorporate evolutionary theory into theology. However it was the evolutionary theory of Darwin and not Hume which was most influential. Whitehead came from this background and developed a process philosophy.

Recently there has been a rapprochement between science and religion in which theologians are trying to develop a new metaphysic that is congruent with modern science. The Scotch theologian Thomas Torrance, when receiving the Templeton Prize, said,

> What does seem clear to me is that the old way of thinking in terms of the couplets chance and necessity, uncertainty and determinism must now be replaced by a new way of thinking in terms of spontaneity and open-structured order, for what is revealed to us is an astonishing spontaneity in nature which yields a dynamic kind of order with an indefinite range of intelligibility which cries out for completion beyond the universe known to our natural scientific inquiries. Theologically speaking, what we are concerned with here is an understanding of the spontaneity and freedom of the created universe as grounded in the unlimited spontaneity and freedom of God the Creator. Here natural science and theological science bear closely upon one another at their boundary conditions, and what is needed is a more

adequate doctrine of creation in which knowledge from both sides of those boundary conditions can be co-ordinated.[1]

The important question for Unificationism is whether or nor it can provide a framework for the understanding of self-generating order. In particular, is God outside the world imposing order on it and designing everything we see, or is God working in and through the processes of the natural world. This also has important implications for the notion of the Kingdom of Heaven. Is there a "blueprint" waiting to be implemented? Is there an end-state to be achieved, a goal to be reached, a purpose to be accomplished?

Studies of Unificationist social theory have sometimes been schizophrenic. For example, Denis Collins in his thesis, "St. Paul, Contextualization and the Conversion of America or Why the Unification Church of America Should Americanize and Democratize its Policies in the United States,"[2] argues that the democratic and liberal values of England and America should be incorporated into the Unification movement. At the same time, or only one year earlier, he argued that when the Messiah comes he would be an "autocratic-monarch" and that the economy would be a form of "theocratic socialism" based on the principle of, "each contributes to the best of their ability and receives according to his needs."[3] The Messiah would personally guide each business leader and political servant. A Unification society would be characterized by social, economic equality. All land would be held by a worldwide government[4] and there would be no money.[5] The whole system would be guided by industrial technocrats who would determine 'easily' how much food was required in different parts of the world.[6] In short, he advocates the ideas of More, Bellamy and other utopians. There is no ontological discussion of Unificationism. What he is arguing for in the thesis would destroy the very ideal he was supporting in his paper, which was a not inaccurate extrapolation of what the world would be like if it was modelled on the Unification movement. Such views are not uncommon. They presuppose that there is a blueprint, an end-state to which we are moving called the Kingdom of Heaven. This betrays both a misunderstanding of the nature of social order as well as a reluctance to think the Principle through and to think through what its implications are. Many people joined the Unification Church and changed their religious beliefs but did not deeply reevaluate their political, economic and social views.

Studies of evolution from a Unificationist perspective have also been apologies for the Greco-Christian God and not for Unificationism. The criticisms of Hume by Christian theology do not affect the Principle because it is not based on Greek categories. Because Sun Myung Moon comes from Korea, a land in which Confucian and Taoist values are predominant, it is helpful to read the Principle with those, and not Greek, categories in mind. Thus Wittgenstein said, "Philosophy is a battle against the bewitchment of our intelligence by language." Therefore, "we

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[1]Thomas Torrance, quoted in John C. Eccles, <u>The Human Psyche</u> (Berlin: Springer International, 1980), 245-46.

[2]Denis Collins, "St. Paul, Contextualization and the Conversion of America or Why the Unification Church of America Should Americanize and Democratize its Policies in the United States" (M.Div. thesis, Unification Theological Seminary, 1983). By "liberal" Collins, of course, did not mean classical liberalism.

[3]Denis Collins, "*Kiryat Yedidim* and Unificationism: Two Views of an Ideal Socialistic Society" (Unpublished paper, Unification Theological Seminary, 1982), 26.

[4]Ibid., 32.

[5]Ibid., 35.

[6]Ibid., 37.

must do away with all *explanation*, and description alone must take its place."[1] This was a similar program to that of Edmund Husserl who found the crisis of European civilization in the separation of science from the "life-world". Unificationism starts with a description of reality. This description, in violation of Wittgenstein's well-taken conclusion to the Tractatus, has to start with the Original Being.[2] As will be seen, the implications of this are profound and radical and involve the deconstruction of our present understanding. The practical implications of this for economics and politics are also radical and at the moment unacceptable.

Order in Unificationism comes ultimately from the order within God, the creator. The explicate order we find in the creation is a reflection, or projection of the implicate order within God.[3] Therefore we have to start with a description of the nature of God, or rather, the Original Image.

II. Divine Image

God in Unificationism is the Original Being, to distinguish him from existing beings, of Original *Sungsang* and Original *Hyungsang*. These Korean terms are commonly translated as internal character and external form, respectively. This is a shallow and partial translation which does not adequately convey the full meaning of the terms. However since the meaning and associated connota-tions of the terms are imbedded in Korean culture, it is not possible for me to give an adequate explanation and I have not found a systematic treatment of them.

A. *Sungsang* and *Hyungsang*

The essence of God is Original *Sungsang* and Original *Hyungsang*. Original *Sungsang* corresponds to the mind of God and as such is the fundamental cause of the internal, invisible, functional aspects of created beings.[4] Original *Hyungsang* corresponds to the body of God and is the fundamental cause of the visible material aspects of created beings.[5] This distinction is similar to that made by the Cappadocian Fathers of the essence and energies of God.

1. Sungsang

Within the Original *Sungsang* there is an inner *Sungsang* which are the faculties of intellect, emotion and will, and the inner *Hyungsang* which contains ideas, concepts, original law and mathematical principles. This is very similar to the distinction Edmund Husserl makes in pure consciousness between *noesis* and *noema*. The former is the thinking part of the mind. It has intentionality and is always directed to and engaged with the object of consciousness. Thus there cannot be pure thinking. Thinking is always thinking about something. It always has an object. The fruit of the interaction between the inner *Sungsang* and inner *Hyungsang* is Logos. Logos thus contains both reason, which is free and almost boundless in its imagination, and law, which is

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[1]Ludwig Wittgenstein, Philosophical Investigations (New York: Macmillan, 1953), 47.
[2]Ludwig Wittgenstein, Tractatus Logico-Philosophicus (London: R.K.P., 1963). Language is the totality of all propositions (4.001) and propositions are pictures of reality. Since one cannot picture God since he is not an object in the world, the word God cannot contain God. The correct method in philosophy therefore would be to speak only about what can be said i.e. the propositions of natural science. As to the rest, which happens to be what is most important: "What we cannot speak about we must pass over in silence." (7).
[3]Sang Hun Lee, Fundamentals of Unification Thought (Tokyo: Unification Thought Institute, 1991), 101.
[4]Ibid., 17.
[5]Ibid., 20.

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characterized by necessity. Logos is formed within God's mind and is manifested by being united with God's *Hyungsang*.

2. Hyungsang

The Original *Hyungsang* has two aspects:

a.*Pre-energy*, which is the energy through which God creates. It is God's potency to create matter but is not itself matter. Matter exists in God only virtually and not formally. This means that the universe, or matter, did not exist along-side God as in Greek philosophy. The world was created by God. At the same time, God is not wholly other. He did not create the world out of nothing, but from within himself. He gave of himself that the universe might come into existence. But, Unificationism is not materialistic because God is not matter. He only has the capability to create matter, along the lines of $e=mc^2$. It is only in the sense of potential that the Original *Hyungsang* is pre-energy. It is from this that God is able to create matter.[1]

When particle physicists are studying what the universe is made of they are studying the results of the Original *Hyungsang*. Recently, as mentioned before, since nothing exists in isolation by itself, but only in relationship with something else, scientists are recognizing that fields are more fundamental than particles.

b.*Prime Force*, which is the energy by which God acts. It is the basis for the forces of nature.[2] Scientists increasingly have recognized that it is impossible to understand particles without understanding forces. They are inextricably linked. There are four fundamental forces in the universe which scientists are trying to unify into a single equation. These are gravity, electro-magnetism, the weak force and the strong force. Scientists have wondered if all four forces are merely four different manifestations of a single underlying *superforce*.[3] Electromagnetism and the weak force were discovered to be part of the same electroweak force, and progress is being made to combine the electroweak force with the strong force. The general theory of relativity discovered by Einstein described the effects of gravity very well but was irreconcilable with quantum theory. Recently the theory of "superstrings" has been able to unify quantum theory and gravity at some levels. The interesting implication though, is that their are ten dimensions in the universe, six besides the ones we are familiar with.[4]

The Original *Hyungsang* is the source both of the energy through which God formed and created the universe, and the energy to enable all things to interact with each other. It is this latter type which is of interest to us. We shall examine it further in the section below on Universal Prime Force and Give and Receive Action.

When scientists are delving into is the *Hyungsang* of God. The Lagrangian they are trying to discover would be a mathematical description of the Original *Hyungsang*. This has been called the Theory of Everything.[5]

3. Difference between *Sungsang* and *Hyungsang*

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[1]Ibid., 21.
[2]Sang Hun Lee, Explaining Unification Thought (New York: Unification Thought Institute, 1981), 29.
[3]Davies, Superforce, 21.
[4]Michael Green, "Superstrings," Scientific American 255 (September 1986): 48-60.
[5]Davies, Cosmic Blueprint, 138.

Sungsang and *hyungsang* must have something in common if they are to interact. The problem of Platonic-Cartesian dualism was that mind or soul and body were of a completely different nature. The body was earthy, corporeal, and perishable, while the soul was incorporeal, invisible, intangible and imperishable. In order to explain how they interacted, God had to be postulated. But since he too was of a different substance, the problem was never solved. There are other problems with this position, as which Anthony Flew discussed and regarded as insuperable.[1]

In Unificationism neither mind nor body are ultimate realities. *Sungsang* and *hyungsang* are simply the inner and outer aspects of each being,[2] the latter expressing the former, or as Wittgenstein said, "The human body is the best picture of the human soul."[3]

The *sungsang* has an energetic or dynamic element which is why the mind can affect the body, and the *hyungsang* has an inner element.[4] This is important because it implies that matter is not purely chaotic as the Greeks supposed. As we saw there is structure even in chaos. This is because the *hyungsang* has an element of *sungsang*. Also, *yang* has an element of *yin* and vice versa.

Unificationism is thus similar to the traditional Hebrew position which also viewed a person as an animated body, not an incarnated soul. Arthur Peacocke described the Biblical view as follows:

> Human nature is seen as a unity with various differentiating organs and functions through any of which a person in his or her totality can express him—or herself and be apprehended . . . personal individuality was delineated not by the boundary of the body but by the responsibility of each person to God, and so by the uniqueness of the divine call to that individual.[5]

The New Testament view is similar regarding a human being as "a psychosomatic unity, a personality whose outward expression is his body and whose centre is his 'heart', 'mind', and 'spirit'."[6] In this way, human being is defined not only in terms of organs but also relationally in terms of responsibility to God.

Unificationism differs however in not accepting what Flew calls the "reconstitutionist" way of immortality, suggested by traditional Christianity[7] and epitomised by the epitaph Benjamin Franklin wrote for himself:

> The body of B. Franklin, Printer, Like the Cover of an Old Book, Its Contents torn out, And stript of its Lettering and Gilding, Lies here, Food for Worms. But the work shall not be lost; for it will, as he believ'd, appear once more in a new and more elegant Edition Corrects and improved By the Author.

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[1]Anthony Flew, "Against Survival," in <u>Philosophy of Religion: An Anthology</u>, ed. Louis P. Pojman (Belmont, Ca.: Wadsworth, 1987), 337-341.
[2]Chung Hwan Kwak, <u>Outline of the Principle: Level 4</u> (New York: Holy Spirit Association for the Unification of World Christianity, 1980), 3.
[3]Ludwig Wittgenstein, <u>Philosophical Investigations</u>, 178.
[4]Lee, <u>Fundamentals</u>, 23.
[5]Peacocke, 89.
[6]Ibid.
[7]Montague Brown, "Aquinas on the Resurrection of the Body," <u>The Thomist</u> 56 (April 1992): 165-207.

Of the possible options for survival after death that Flew considered he thought the astral body, "constituted of a different and somehow shadowy and ethereal sort of stuff than familiar, workaday matter," the most likely candidate.[1] It is corporeal but of a finer type of energy. This is similar to the Unification view that man has a spirit body which continues to dwell for eternity in the spiritual world.

B. *Yang* and *Yin*

The second polarity is between *Yang* and *Yin* which are attributes of *Sungsang* and *Hyungsang*. That is they are accidents of *Sungsang* and *Hyungsang*.[2] There exist masculine humans, but no masculinity by itself. Thus these attributes are the source of the variety which exists through their complex balances. *Yin* and *Yang* are different but are not opposites. They are complementary, like the opposite sides of a coin. Examples of this are:

TABLE 2

YANG AND *YIN* IN UNIFICATIONISM

Yang	Yin
light	dark
high	low
active	passive
clear	vague
mountain	valley
positive	negative
initiating	responsive
convex	concave
protruding	sunken
dynamic	static
strong	weak
male	female
sun	moon
day	night

These polarities are rhythmic, leading to change and variety. "*Yang* and *Yin* exist in order to manifest change, harmony, and beauty in the creation."[3] The greater the difference, the more stunning the beauty. For example, a mountain range as compared to a featureless desert, although in the larger picture, the desert as *yin* balances the mountain range as *yang*. The greater the difference between positive and negative charges, the greater the spark. This can also be in marriage. A masculine man and a feminine woman if they can love each other is more beautiful than two bland individuals.

Yang and *yin* were operating in the creative process of the universe. It was and is through the interaction of these polarities that the universe came into being and developed.[4] Dr Lee compares God's creative process to the playing of a symphony, in which the combination of the

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[1]Flew, 336.
[2]Lee, Fundamentals, 27.
[3]Ibid., 27.
[4]Ibid., 69.

various notes compares to the myriad of beings. Peacocke uses a similar analogy when he compares God acting 'in, with and under' the ongoing processes of the natural world, as new and increasingly complex levels of order, inorganic and living evolve, to a composer of a fugue:

> God as Creator [is] like a composer who, beginning with an arrangement of notes in an apparently simple tune, elaborates and expands it into a fugue by a variety of devices. Thus does a J.S Bach create a complex and interlocking harmonious fusion of his original material. The listener to such a fugue experiences, with the luxuriant and profuse growth that emanates from the original simple structure, whole new worlds of emotional experience that are a result of the interplay between an expectation based on past experience ('law') and an openness to the new ('chance' in the sense that the listener cannot predict or control it).[1]

There are some not inconsiderable problems in these polarities as described in the text and as applied to human beings. In the text a new category is introduced which makes it lack coherence. At the same time the existing list does not adequately correspond to reality.[2] However this problem does not affect the present discussion.

The implication of this is that everything exists in relationship. Relationality is fundamental, and indeed, is the source of identity and definition.

C. Individual Image.

The above, *Sungsang* and *Hyungsang*, *Yang* and *Yin*, are part of the universal image, in that they appear in all created beings. However there are also Individual Images, which exist in the mind of God and are the source of the extraordinary individuality which becomes manifested in the higher orders of creation.[3]

D. Subject, object and relationality

Unification thought is thus fundamentally relational. The polarities though, are different to those of Pythagoreanism. Firstly, good and evil are not regarded as complementary pairs. The existence of evil is a mistake, a result of the fall of man, which has distorted and at times inverted the true order of things. Secondly, the dualities described are richer in content. Thirdly, the pairs are not called opposites, but *paired elements* or *correlative elements*. They complement each other and together form a whole.

There are three subject-object pairs in Unificationism: that between *sungsang* and *hyungsang*; *yang* and *yin*; and between principal element and subordinate element. Examples of the latter are the relationships between parents and children, sun and earth, and nucleus and cytoplasm.

The relationship between these pairs is that of subject and object, where subject is characterized by being, central, dynamic, initiating, creative, active and extrovert in relation to the object, which is dependent, static, responding, conservative, passive and introvert.[4] The subject has dominion over the object. However the Korean term for dominion also includes the notion of heart and love. It is dominion of and through love, and not by power or force.

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[1]Peacocke, 97-98.
[2]William Haines, "Yin and Yang in Unification Thought," unpublished paper, 1991.
[3]Lee, Fundamentals, 31.
[4]Lee, Fundamentals, 45.

The use of the words subject and object is very different to that of normal English usage. Englishmen are subjects of Her Majesty the Queen. Here the word subject is related to subjugate. A person is subjective when they see things from their own, rather biased, point of view, without taking the facts sufficiently into consideration. A person is objective is he tries to look at a situation in a detached manner. Objects are always inanimate and so you never call someone an object. In Unificationism by contrast, in all relationships, including human ones, there is a subject and an object.

As an example of how Unificationism is a relational philosophy, I will examine its theory of axiology. While Unificationists often talk about absolute values, what is meant is not the absolute values of Plato which exist as Ideas in another realm waiting to be apprehended and imposed. On the contrary, values exist in this world and are defined relationally.

Value "refers to a quality of an object that satisfies the desire of the subject."[1] There are two aspects of value. Essential value, which lies in the object, is the purpose for which it was created and its own inner harmony. However, even though something may have essential value, unless this is recognized and appreciated, the object will have no actual value. If a person is able to appreciate the purpose for which the object was created and can utilize the object, the object is valuable to him. Of course, there are objects created for one purpose yet valuable for accomplishing some other purpose. So in some way an object's essential value can be imputed by the user. In any case, "value is determined through the give and receive action between a subject and object."[2] There is no inherent absolute latent value to an object. Valuation has a large subjective element, as values are 'felt', not measured. This critique also applies to the labour theory of value where the value of a good was to be measured in terms of the amount of labour invested in it, as opposed to its market price, what someone is willing to pay for it.

Love is the source of beauty, trueness and goodness, and love is relational. Love creates and appreciates beauty. (Beauty is in the eye of the beholder). Acts of love are what goodness is. And truth is beautiful. This insight or intuition has been the justification of several scientific theories until they were verified.

Within a particular culture or community there are certain values shared by everyone. This was, of course, more true of the past than the present, where there is great confusion. These values could be regarded as absolute values within that culture. Often they are tacit and unquestioned, being lived as opposed to taught. They form the very warp and woof of the society. However, because there are different religions giving rise to different cultures, there are different, relative values systems. This results in conflict and confusion when they meet. An absolute standard of values would be defined as the values which all people have in common and share. These values though are not to be found written in a book. They are not abstract, and indeed do not exist unless made concrete through being lived. A standard of absolute love is not measurable rationally. It is felt or intuited. The ultimate standard of love will be that which has been lived out. So when the

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[1] Ibid., 157.
[2] Ibid., 162.

Bible says that Jesus was the "way, the truth and the life," this does not mean that he taught true doctrine, but that his own lifestyle was the standard of truth.

> . . . do not make the mistake of confusing absolute values with absolutism. I have emphasised . . . that absolute values are based on God's love. God's love is not sectarian. God's love reaches deep into human hearts and becomes the source of true love gushing out into the everyday lives of human beings. Therefore, God's love is the fundamental element for forming one harmonious heartistic realm embracing all people that comprehends all relative values. Thus, absolute values based on God's love are deeper, broader and more permanent than values based on rational presuppositions or on relative ideologies or beliefs.[1]

Relationships then are primary. Substance secondary. Relationships define the elements and not vice versa. This distinction has also been made in modern physics where fields are more fundamental than particles.

III. The Divine Character

Heart, logos and creativity are the three fundamental aspects of God's character which Unificationism deals with. They are logically connected to the Three Blessings. So that man could inherit his divine character, God gave man the three blessings.

A. Heart

Heart is the core of God's personality and is the emotional impulse to obtain joy through loving and being loved. Heart is the root of purpose and motivation, and explains why God created. Love is defined relationally. It is not merely a state of mind or a feeling, in other words an accident, but, "the emotional force that a subject gives to an object that makes the object rejoice."[2] It can only exist and be fulfilled in a relationship. Therefore to satisfy his heart God created objects to love, objects in his own image. This is not unlike Bergson's view that evolution is "God's undertaking to create creators that he may have, besides himself, beings worthy of his love." Unificationism would also share Barth's view in his Credo that, "If God were not love (a thing as such impossible) he could get along without the world very well." Since God created man in his image, man too has a heart which is irrepressible and longs for true love. A person who fulfils the first blessing becomes a complete object of God's heart, and the most important aspect of the spirit self which has to be perfected through the physical self, is a person's sensitivity to the love of God.[3]

Love can only exist in freedom. It is spontaneous, and relationships of love are characterized by their spontaneity. For this reason God gave man the freedom to perfect himself through fulfilling his own responsibility. In this man is different to other creatures.

> Man constitutes a break in the evolutionary process which had hitherto depended on the continuous operation of natural 'laws'. For man appears to have himself a free

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[1]Sun Myung Moon, "Absolute Values and the Reassessment of the Contemporary World," Unification Thought Quarterly (June 1988): 7.
[2]Lee, Explaining, 21.
[3]Kwak, 43.

will allowing him to make choices and is free to fail to respond to the challenge presented to him.[1]

Man is able to shape his own evolution by willingly shaping his environment. Man's evolution is also not primarily biological, but cultural, and is studied as history, not biology.

B. Logos

Logos is formed through the give and receive action between the inner *Sungsang* and inner *Hyungsang* centring on purpose. Reason is the main function of the inner *Sungsang* which is involved, and because reason is free, imagination is boundless. Law, in the inner *Hyungsang*, implies necessity and inevitability. Thus freedom and law, chance and necessity are unified in the logos.[2] It is the logos which is involved in the development of the universe. Prigogine and Eigen showed how "the mutual interplay of chance and law is in fact creative within time, for it is the combination of the two which allows new forms to emerge and evolve."[3]

Thus in Unificationism, determinism, which sees everything as foreordained is rejected. Particular in the human realm predestination is explicitly rejected, because it would violate human responsibility. But the indeterminism of Darwinism with its emphasis on random chance is also rejected.[4] Instead it offers the view that the universe has autonomously developed in a certain direction although it could have gone in other directions. This is similar to the anthropic cosmological argument, which suggests that the universe is the way that it is so to enable an environment to develop where man could evolve and in some sense have dominion over it. Without man the universe would in some very real way be incomplete. The future is open-ended and genuine novelty can arise. The law sets the boundary conditions within which novelty can develop.

A self-organising system has as we saw, a certain autonomy. It establishes its structure according to internal principles of organisation independently of the environment. Living organisms are self-organising and in that sense free. An autonomous being is not dominated by the environment, but is able to selectively interact with it and to change it either by moving or by modifying it. The greater the degree of order and complexity, the greater the degree of autonomy and hence of freedom. The lower the level, the more linear and law-governed. The culmination of this relative autonomy and freedom is in human beings which can behave very non-linearly, because each is unique and to a certain extent unpredictable, and always ultimately unfathomable.[5]

The logos when applied to human relations, is the norm that govern love. In other words ethics. Thus a person who inherits God's nature of logos is someone who can conduct himself and love purely and properly. It is similar to the Confucian concept *Li* (propriety), except that the emphasis in the Principle is on the norms of love in relationship. The understanding of freedom in Unificationism is very similar to that of classical liberalism. As Hayek and the Unification Principle stress that there is no freedom without responsibility and freedom only exists within the

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[1]Peacocke, 92.
[2]Lee, Explaining, 24.
[3]Peacocke, 64.
[4]Lee, Explaining, 25.
[5]Fritjof Capra, "The New Vision of Reality," The World & I 1 (May 1986), 604.

framework of the rules of just conduct, in other words, within the Principle as applied to human relationships. And this freedom is necessary for there to be creativity.

C. Creativity

The third aspect of God's character which Unificationism deals with at length is God's creativity. This is God's ability to create new things.[1] This occurs, as we shall see, through the two stage structure. God desired that man, too, should inherit creativity, to become co-creator and ultimately Lord of Creation. Such a person would have dominion over the creation with love and truth. This implies that man owns the creation and is responsible for what he owns. He can dispose of it as he wishes.[2]

IV. Structure of the Original Image

Despite the confirmation that God is One and not a composite being, Unificationism tries to explain God's nature using spatial and temporal terms. Thus, each of the attributes of God maintains a specific relationship to other attributes.

A. Four Position Foundation

When God's *Sungsang* and *Hyungsang* engage in give and receive action, centring on Heart, a harmonized body or union is formed, which is called the Four Position Foundation. This obviously does not exist in God as such, but is a spatial conception. Heart, which is placed at the centre, actually lies deep within the *Sungsang*. However it is placed in the central position because it is the source of motivation and purpose for the give and receive action. This central position though, has no substantial existence. It is not coordinating the subject and object in their relationship. Thus when subject and object unite they do so not centred around a third being, but around a common purpose.

B. Identity-Maintaining And Identity-Developing Quadruple Bases

The problem of philosophically reconciling the observation that things change but are also in some sense the same was, at the heart of Greek thought. The conclusion was to postulate an unmoved mover. However the God of the Bible is very different from the God of the philosophers. The Hebrew God is very passionate, emotional, immanent, engaged with the world and wont to change his mind. Abraham persuaded him not to destroy Sodom and Gomorrah if some righteous people could be found there. And much to Jonah's disgust, God did not destroy Nineveh when the people repented.

Unificationism tries to solve this problem through its understanding of the four position foundation. When the four position foundation within God is centred upon Heart without a particular purpose, the result is a union, or harmonized body. This give and receive action is static, maintaining God's identity and nature. From this can be inferred God's immutability and unchanging character. Thus God's love, and will are unchanging and absolute. In the created world

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[1]Lee, Explaining, 26.
[2]Sang Hun Lee, "The Unity of Religions and of Thought Systems and the Construction of the New Cultural World," Unification Thought Quarterly (July 1990): 19.

beings also have an identity-maintaining base, although it is centred on purpose. A watch for example should be unchanging.

The developing base within God is formed when the heart is purposeful. The fourth position is a new or multiplied body. This can be either within the inner quadruple base as in the formation of logos, or in the outer quadruple base as in the creation of new beings. So God can create and in creating becomes different. And furthermore, in interacting with the result of his creation he becomes different again. God is enriched, and, in that sense changes through his relationship with the world and more particularly with man. Yet still God is also unchanging, reliable, and trustable. Thus within God there is the unity of unchanging and changing, of *stasis* and *dynamis*.[1]

This is also important for people too. Everyone, in forming an identity-maintaining base becomes a mature, autonomous person. But we should also be engaged in the world and vulnerable to it, always being changed and enriched by our encounters with it. A couple too should have a love, identity and stability not dependent on, although enriched by, their children. A developing base, which is formed through having children and a family, is not enough by itself. It is not unusual for couples to remain married "for the children's sake" when they are actually unhappy in their own relationship. Furthermore, some couples wish only to enjoy each other's company and not to have children. This relationship is also unstable because it is inward-looking, "hoarding being to itself" as John Macquarrie might say.

C. The Creation Process

There are sections of Unification Thought which make it appear that the God of Unificationism is a designer such as, " . . . everything turned out as God had conceived it or thought about it."[2] This is very much like the traditional Christian view that because God is sovereign there must be a divine plan for everything that happens. However I will show that this interpretation is not consistent with the whole context of Unificationism.

The "two-stage structure of creation" which is the process through which God creates, is based on the developmental quadruple bases examined above.

Within the inner developing quadruple base, the logos is formed through the give and receive action between the inner *Sungsang* and inner *Hyungsang* to fulfil a particular purpose. Reason and law, as mentioned before, are particularly important in this process. Reason to design the blueprint, law to limit the imagination to what is feasible. An example is given of God designing a bird, much in the same way as an engineer would design a plane. Thus in creating birds the laws of aerodynamics have to be borne in mind, although this was obviously not a consideration where the dodo was concerned. This logos is referred to as a blueprint. This logos then engages in give and take with *Hyungsang* (pre-matter), and a bird is created. The image of the bird is "stamped" onto the *Hyungsang*.[3]

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[1]Lee, Explaining, 31.
[2]Lee, Fundamentals, 19.
[3]Ibid., 31.

This analogy is very anthropomorphic. It is an example of how a man would create a bird were he able to. Since God is not a man and cannot fashion a bird in the same way that a man makes a house the analogy is also misleading. The further implication of the argument from analogy is that there must be many gods since it takes many people to build a complex structure.[1] It implies a god that exists as a member of a list of objects in the world. It is also a sort of "God-of-the-gaps" type of argument. While scientists have so far been unable to explain how new species arise there is no reason why a natural explanation should not be developed in the future. There is a better explanation of how God creates which I will examine below.

There is another analogy used which bears on this problem. The transcendence of God is illustrated by comparing it to a roll of motion film:

> The structure of the Original Image exists in oneness in the world transcending time and space. This can be compared to a roll of motion picture film. The roll of film can be said to hold the contents of a story in a way that transcends time and space. When projected onto the space of a screen, the images developed according to a time sequence, and the story unfolds as if it were reality. God's creation can be thought of in a similar way. As God's plan was developed on the screen of time and space, the universe appeared; eventually, plants appeared on the earth, then animals, and finally human beings.[2]

This is similar to David Bohm's notion of an implicate order unfolding to reveal an explicate order. However this is a determinist viewpoint. There is no novelty or spontaneity as everything is already "there", just waiting to be unfolded. Again this analogy is not consistent with Unification Thought. In Unificationism, freedom is a very important part of God's creation. Because of this the future is essentially unknowable. God knows what may happen in the future, but because of the essentially chaotic element deep within the creation, the future is unknown in a real sense, even to God. God too can be surprised, though more often than not disappointed and hurt by what happens. A further constraint is that the creation process is not a purely a rational process as many artists and scientists will testify. There is an element of intuition and the unknown. It is easy to be surprised by what one creates. In fact that is much of the joy.

This is why God gave man freedom and did not intervene to prevent the fall. In giving man freedom God does not know the future. This is evident from the Bible where God gives people the choice of destiny (Deut. 11:26-28) and sends the prophets. There is no point or meaning in sending a prophet if God already knew, because it was predestined, what the outcome would be. Unificationism specifically rejects predestination, and thus determinism, which excludes freedom. If there is freedom, things can turn out contrary to the way God intended. This is what in fact happened.

As we shall see when discussing universal prime force, God is active in the world. He is active because he is in the world as opposed to intervening from outside the world. If God is present in the world, immanent, then the way creation occurs is not through order being imposed, but through order arising from within the world. God is in the process of creation.

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[1]David Hume, Dialogues Concerning Natural Religion (Indianapolis: Hackett, 1980), 16.
[2]Lee, Ibid., 51-52.

Creation is not a one-off event but a continuous process. The stuff of the world has an in-built creativity. It responds to the changing environment creatively. God is immanent in the universal prime force, which guides give and take action to greater levels of development and complexity.

In what sense then, can we say God is the creator. There are two ways in which the transcendent God could have created. One is the creationist view that evolution is wrong and that in fact God designed and created each thing. This is the view implied by Dr Lee's "bird" example. However evolution through mutations is not excluded as a mechanism by Dr Lee. What is rejected is the philosophical statement that such mutations are random.[1] A second way in which God may be the designer is in the sense of establishing the fundamental laws of the universe and initial state of the Big Bang. As mentioned before, if an intelligence knew the initial conditions to an infinite accuracy, it would be possible to know what kind of universe would emerge. John Leslie, as mentioned in Appendix 2, developed a powerful argument from the evidence of 'fine tuning' for God's design of the laws and constants of the universe, without which initial state we would not be here. This perspective seems to be that of Dr Lee too:

> . . . the direction of the development of the universe was determined through the function of reason on the basis of the operation of laws . . . [which] . . . already existed within God's Inner *hyungsang*, even prior to God's creation of the universe . . . In other words, law had been prepared, from the very beginning, for the realization of the purpose.[2]

It is thus one thing to argue that God designed the laws which would enable a spontaneous order to develop, and quite another to suggest that he designed and created each being, or at least its primogenitor. It seems clear that the universe spontaneously evolved through symmetry-breaking to the present orderly state. This could come about through the coincidence of chance and law and the self-organising capability of matter. This self-organising capability is due to matter having an internal element, a *sungsang*. Hayek himself noted that the rules need not have a spontaneous origin for a spontaneous order to develop. All that was required was good rules.

I would prefer to suggest that God created the world to be self-generating and self-organising, partly so that he would be surprised, and partly because it would leave him free to enjoy his children. In any case, even if God designed the laws and initial conditions, he could not necessarily know all that would develop as a result. It is a little-known property of axiomatic reasoning that it is not possible to predict all the consequences that can 'in the fullness of time' flow from it.[3] So in that sense maybe God wrote the elements of chance and chaos into the design. Even if God created the universe and the variety in it for man's pleasure, it is still the case that there are far more varieties of species at the bottom of the ocean than there are on land. Unfortunately it is hard for man to appreciate and enjoy them.

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[1] Lee, Explaining, 71-72.
[2] Lee, Fundamentals, 40, 99.
[3] W.W. Bartley, III, Unfathomed Knowledge, Unmeasured Wealth (La Salle, Ill.: Open Court, 1990), 34-39.

V. Ontology

This is the theory of created beings deduced from the theory of the Original Image. It should therefore be congruent with scientific understanding. As mentioned before, the old mechanistic worldview derived from Greek philosophy via Descartes is inadequate to account for the discoveries of modern science. The atomic theory of the Atomists, so popular for so long, has been superseded as fields are regarded as being more fundamental, particles being just distortions of the field. Unificationism claims to be, and is also described as, the "basis for understanding ourselves as well as our society, in its aspects of politics, economics, and so on."[1]

Unificationism views a being from two perspectives. Firstly as an independent entity, without regard to its relationships to other beings, and secondly, as an entity in relation with other beings. The former is called an *individual truth body*, the latter a, *connected body*. This is similar to the traditional Hebrew and Christian distinctions we saw above.

A. Individual Truth Body

Every individual truth body has the same essential structure as the Original Image, namely *sungsang* and *hyungsang*; *yang* and *yin*.

1. *Sungsang* and *hyungsang*

There is a stepped structure or hierarchy of *sungsang* and *hyungsang* in existing beings such that each level of complexity is qualitatively different. This accords with the view that evolution happened, not gradually, but in jumps. The same layers are present in the higher levels as are present in the lower ones.

TABLE 3

"STEPPED STRUCTURE OF *SUNGSANG* AND *HYUNGSANG* IN EXISTING BEINGS"

SUNGSANG

			spirit mind
		sense, instinct	sense, instinct
	life (autonomy)	life (autonomy)	life (autonomy)
physicochemical character	physicochemical character	physicochemical character	physicochemical character
atoms, molecules	atoms, molecules	atoms, molecules	atoms, molecules
	cells, tissues	cells, tissues	cells, tissue
		organs, nerves	organs, nerves
			spirit body

HYUNGSANG

This is similar to the discussion of hierarchy we met in Pattee and Peacocke. Each of the levels in the stepped structure is a new level in the hierarchy which can be explained in terms of its

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[1]Lee, Explaining, 45.

own laws and theories but is not reducable to a lower level. This also corresponds the downward causation of one level on a lower one such as Whitehead's electron.

The *sungsang—hyungsang* polarity finds many examples in modern science such as the notion of complementarity in quantum mechanics. It is no more possible to explain mental events in terms of neuron firing as it is possible to reduce the wave character of light to particles. The *sungsang* aspect is like the software in a computer, the *hyungsang* like the hardware.

The structure of DNA was unravelled by the marriage of two strands of molecular biology: the information school, trying to understand genetic information and inheritance, and the structural school, trying to reduce biology to physics. They met in Cambridge in the work of J.D. Watson and F.H.C. Crick. They discovered the double helix structure made up of combinations of four base pairs. A particular base sequence has 'meaning' which cannot be explained in terms of physics or chemistry. It conveys information which has a particular meaning in a particular organism and,

> . . . in no way can the concept of information, the *concept* of conveying a message, be articulated in terms of the *concepts* of physics and chemistry, even though the latter can now be shown to explain how the molecular machinery (DNA, RNA, the appropriate enzymes etc.) operates to convey information.[1]

The structure of a protein molecule, and still more, a DNA molecule, is so complex that it has been suggested that there is some sense in which there is global coordination taking place. A DNA molecule is several metres long, yet has to be folded in a precise way to function. It could not have found it by chance, or by trying all the different combinations until it found the one with lowest entropy. There is some non-local action being exhibited. It is acting as a whole system.

As we saw, the phenomena of morphogenesis requires way to explain global coordination of cells. This is impossible for DNA to do alone. This is why Sheldrake postulated the existence of a life field. The information contained by DNA cannot be reduced to its molecular structure any more than can thoughts be reduced to neuron firing in the brain.[2]

The understanding of hierarchy expounded by Howard Pattee is also similar. Each level in the hierarchy has its own laws, and exhibits downward causation on the lower level elements without violating the lower level laws. These are additional, not different, laws. As we saw above, the idea of downward causation suggests that, "all processes at the lower levels of a hierarchy are restrained by and act in conformity to the laws of the higher levels."[3] When a protein molecule assumes its precise and complex three dimensional shape it is suggested that the protein in some sense 'knows' what shape to take, since the number of possible configurations is vast. To achieve its shape different parts of the molecule must move in unison with each other although separated by a great distance. The non-locality shown by the E.P.R experiment has been suggested as one possible explanation. The holistic implications of E.P.R suggest that global action-at-a-distance is

[1]Peacocke, 61.
[2]John Eccles, The Human Psyche (Berlin: Springer International, 1980), 21.
[3]Donald T. Campbell, "`Downward Causation', in Hierarchically Organized Biological Systems," in Studies in the Philosophy of Biology, eds. Francisco Jose Ayala and Theodosius Dobzhansky (London: Macmillan, 1974), 179.

indeed possible.[1] There is thus a real sense in which a molecule has an inherent directive nature or physio-chemical character.

2. *Yang* and *Yin*

Polarity exists throughout the creation. Scientists have often commented on the symmetry which exists, and use this to postulate the existence of undiscovered particles. *Yang* and *yin* include masculinity and femininity, and positivity and negativity. There are two important points to note here. Firstly, unlike in the English language, "negative" in Unificationism does not have the connota-tion of evil or deficient (despite its general conversational use by Unificationists in this way). And secondly, as mentioned before, Derrida has been compared to Lao Tzu. Both reversed the normal order of polarities in their own cultures. Unificationism therefore has reversed again the reversed order. Hence *yang* and *yin* instead of the traditional *yin* and *yang*.

The standard model of particle physics synthesised from decades of research asserts that there are twelve basic building blocks of matter. At the sub-atomic level, all particles fall into two distinct classes. They are either 'bosons' with a spin of 0, 1 or 2; or 'fermions' with a spin of 1/2 or 1.1/2.[2] Leptons, (such as the electron) are fermions. There are six arranged in three pairs: electron/electron-neutrino; muon/muon-neutrino; and tauon/tauon-neutrino. Hadrons (such as protons and neutrons) are bosons. They are made up of a still more fundamental particle, the quark, of which there are also six: up, down, strange, charm, top and bottom, which also are arranged in pairs. At the same time, "Leptons and quarks associate naturally in pairs according to their flavours."[3] A further symmetry is that for each of the above particles there exists an antiparticle made of antimatter.

At the level of minerals, there are anions and cations. A molecule has neutral charge if they balance out. At the level of life, DNA is a double helix of base pairs. It replicates by unravelling and each strand creating its pair.

Plants too are distinguished by polarity. Many plants carry the male and female aspects, producing both pollen and eggs, the pollen being needed in many plants to fertilize the egg.

Animals too reproduce sexually. Some are always the same sex. Some change it, and some are both. If they reproduce asexually, there is still a division process within the DNA.

The final polarity is between masculinity and femininity. Although men and women are clearly different externally, they are also different internally. Of course, there are no pure types. Within each man there is femininity, and within each woman masculinity. Carl Jung described them as anima and animus.

These complementary, mutual polarities enable there to be give and receive action from which is generated the energy to exist, reproduce, act and develop to a higher level of order. This is the energy that enables spontaneous order to arise. As we shall see, this give and receive and the energy produced is directed towards the establishment of higher levels of order and complexity.

B. Connected Body

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[1]Davies, Cosmic Blueprint, 178-79.
[2]Davies, Superforce, 82.
[3]Ibid., 90.

An individual truth body looked at from the point of view of its relationships with other beings is called a connected body.

1. Dual purposes

A connected body has dual purposes, for the individual and for the whole. The former is its self-preservation and self-development; the latter, to contribute to the well being of the whole, its preservation and development, of which it is an individual member. The purpose of a being is given by its creator. Purpose is thus attributed to the atom when it establishes a quadruple base within itself and between it and other atoms to form a molecule. Molecules are thus described as existing for the purpose of making a cell. This imputation of purpose can only be made if a creator God is assumed. Unificationism further makes the interesting distinction between a *sungsang* and *hyungsang* purpose within the purpose for the whole.[1] Thus the *hyungsang* whole purpose of the earth is to orbit the sun and form the solar system, while its *sungsang* whole purpose is to provide a suitable dwelling place for man. Such a wide use of the notion of purpose indicates that it need not be conscious. As noted above, one of the characteristics of spontaneous orders was their lack of purpose. They were not the product of deliberate design.

A united world is thus not based on a shared and common external purpose given by some overall global administrator, but on absolute values which are the universally accepted norms of behaviour. But within that framework there are a myriad number of ways in which people can set about fulfilling the purpose of life, to bring joy to God and to others.

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[1]Lee, Fundamentals, 86-87.

2. Human Relationships

As a connected body man forms social relationships, metaphorically speaking, in six different directions. In front are teachers and leaders while behind are followers and students; to the right, brothers, sisters and friends, and to the left, competitors and opponents; above are parents, superiors and the monarch, while below are children, subordinates and juniors.

Man also exists in a relationship with the surroundings. As we saw, one of the implications of quantum theory is the holistic nature of the universe going far beyond John Donne's "No Man is an Island." Everything is interconnected and affects everything else.

Thus everything is related to everything else in a certain order. The order within the created world is a reflection of the order in the Original Image. This is why we find the same spontaneous order everywhere. This order is not imposed but naturally and spontaneously comes about when people love and relate to each other within a framework of norms. These norms tend to be more prohibitive, delineating the boundary of acceptable behaviour. Within that boundary there is freedom and a lot of scope for spontaneity and creativity. The nature of love is that it enjoys being surprised.

C. Universal Prime Force and Give and Receive Action

As we described above, the force of God which is the cause of the forces in creation is called Prime Force. It is the force which acts between elementary particles[1] and is the cause of Universal Prime Force. Universal prime force is the force which acts <u>in</u> the creation.

The problem with Cartesian dualism was that there was no way for God and the world to interact because they were of different substances any more than mind and body could interact. This is the consequence of emphasising substance. In Unificationism however, relationality is primary and substance is secondary. This means that God acts <u>in</u> the world, not <u>on</u> the world. God is love and love is relationship. So God is in the relationships in the world. In this sense we can say that God is immanent because he is present in the relationships which exist in the created world. God is transcendent not because he is outside the world but because he is infinitely immanent.

Thus when we experience God it is seldom as a beam of light from outside. Usually it comes from within, such as Elijah's small voice, or we experience God in relationships with others, or in relationship to nature, or in the dialogue within our self. Universal prime force, as mentioned above, also has a *sungsang* element. It has reason and love. So God's love is present in everything. The highest level of universal prime force is the love between parents and children, husband and wife. But the same force is at work between molecules.

Universal prime force then is,

> . . . the force that acts among correlative elements in the created world; it is also the
> force that is generated by the give and take action between them.[2]

That is, it is the force which enables and initiates give and take action between a subject and an object. It is the action within the subject and object which establishes a relationship between them.

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[1]Lee, <u>Explaining</u>, 12.
[2]Ibid., 11.

When looked at from the point of view of an initiator of give and receive action, it is a vertical force. That means that it initiates interaction on a higher level of existence. Through initiating interaction between a subject and an object to bring them into a union it brings about a higher level of existence. When considered as the result of give and receive action between the subject and object, the universal prime force is called the force of give and receive action, a horizontal force. Thus,

> The Universal Prime Force acting *between* the subject and object is caused directly by the Universal Prime Force acting *within* the subject and object.[1]

To try to illustrate this apparently obscure idea but seminal idea, I will give some examples. The give and receive action within a person (subject), between the mind (subject) and body (object), generates the universal prime force which initiates a relationship with someone else (object). The energy in the relationship between two people is generated by the inner unity between

Figure 4. Universal Prime Force and Give and Receive Action

the mind and body of each of them. This establishes a higher level of being or existence. This may be a friendship or a couple. In that sense it is called vertical because it is leading to the establishment of a higher level. It is the energy generated on a lower level which is establishing a higher level. Thus a person whose mind and body are not in harmony, who, metaphorically speaking has a mind in one place, and body in another, often does not have energy to extend himself and establish a relationship with someone else. A very lazy person often is too lethargic and apathetic to reach out to others. Likewise a community exists not because there are a certain number of individuals in a certain space, but because they exist in relationship with each other. Thus a tangible community exists. Furthermore, a family which is disunited and full of conflict is unlikely to be able to, or even to think of, forming relationships with other families.

The same is true at the level of particle physics. It is the forces between particles which make them interact to form atoms. The forces between atoms which form a molecule are generated by the forces within the atoms. Matter is a hierarchy of structure.

At the macro-level, if there were no gravity it would not be possible to walk, since there would not be a relationship between things and the ground. Gravity, then, enables there to be

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[1]Ibid., 12.

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relationships between large bodies. It is through gravity that the solar system exists. Gravity, as we saw, was an expression of the universal prime force and as such was the organizing force in the universe.

Every being at the time of its creation has universal prime force projected into it by God. Because this basic element contained in all things has its origin in one source God,

> . . . the Creation is harmonious in its myriad forms, regardless of the countless types of Give and Take Action initiated by the Universal Prime Force. In other words, through Universal Prime Force, give and take action is directed by a unifying purpose, and through its organic relationships, generates the forces necessary for existence, reproduction, and action of all things, from the smallest to the largest.
> The direction and goal of all give and take actions are controlled by Universal Prime Force. Give and take action exists not only so that a subject and object can fulfil their individual purposes, but also for the greater purpose of unifying all things. The ultimate purpose of give and take action is to have subject and object unite and develop to a greater and higher dimension.[1]

The implication of this for order is that order comes about naturally and spontaneously, not because of design but through the relationship between subject and object. Order comes from below and goes upwards. It is not imposed from above. Through universal prime force, God is acting in relationships. Thus they are all directed to a greater level of order and complexity naturally. Give and receive brings unity between subject and object, which creates a higher level of existence. There is no need for a planner or coordinator.

Where there is true love in relationships, or even just good manners, there is a natural and spontaneous order which is harmonious and in which everything flows. There are shades here of Adam Smith's 'invisible hand' harmonizing all the different relationships. Here is an order which is not the result of design, but is the spontaneous order which comes about from harmonious activity.

This is why when talking about world peace Sun Myung Moon does not discuss government policy or legislation but the change which starts with the individual and moves upwards to higher and higher levels of complexity and order:

> Peace is not desired on the world level alone, but also on the level of nations, societies and families as well. Even individuals yearn for peace between their minds and bodies.
> Of these various levels of peace, which level should be established first?
> It is easy to think that if world peace were established first, then on that basis the peace of nations, societies, families, and eventually individuals would also be established.
> But this is the wrong viewpoint. It is actually the reverse of the sequence necessary to establish peace. Individual peace must first be realized. Then family peace can soon follow, and only on that foundation can the peace of societies, nations and the world be expected. This is because individuals are the basic units of families, and families are the basic units of societies and nations.
> Frequently leaders believe that through outstanding organisation and superior thought they can restore both the order of society and world peace. In reality, however, the peace of mankind can never be realized through these means

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[1]Kwak, 16.

alone. International organisations such as the United Nations and thought systems such as communism, democracy etc., have all tried to realize world peace in their own ways, but peace is still far from our grasp, and the world is experiencing more confusion as days go by.

Unless the quest for peace starts from the peace of an individual it is bound to fail again and again. . . . world peace begins with individual peace and expands through families, societies, and nations to ultimately become world peace.[1]

It is not the imposed order of government policy and regulations that will bring social peace. If people change, their relationships with others are changed. This changes others too. Thus individual level transformation can transform others, and so it expands like ripples in a pond.

D. Cosmic Law

The Law of Give and Receive is the single law which governs the universe. It is also called the Way of Heaven (*Cheon-do*). It has seven features:[2]

1. Correlativity

Every being not only possesses correlative elements but engages in correlative relationships with other beings. Without such correlativity no being can exist or develop. As we have seen, polarity is necessary for there to be spontaneity and self-development.

2. Purpose and Centrality

In order for correlative elements to engage in give and receive action, must share a common purpose and perform give and receive centred on that purpose. However some purposes are explicit while others are merely implicit or part of the assumed, tacit values which are shared by those engaging in give and receive action. Thus many relationships revolve around a specific shared purpose. A football team, for example, is organised around the purpose of scoring goals. However there is a limit beyond which such explicit goal-directed activity can work. Hayek regarded the tribe as the limit. Beyond that in the Great Society, there is mutual coordination of activity not by commands and central planning, but by the spontaneous order of mutually adjusting entities operating within rules. Thus the catallaxy has no purpose beyond that of enabling all the elements within it to pursue their own purposes successfully, since it was not the product of deliberate design. This is in fact recognized in Unificationism.

The determination of the exchange value in the free market economy occurs in the moment when commodities are bought and sold. The 'effect theory of value' as it is called, which is a "philosophical development of Unification Principle," is based on the mutual satisfaction of both producer and consumer.[3]

> . . . both producers and consumers engage in economic activities, centering on the purpose for the whole (the desire to realize values), but more directly according to the purpose for the individual (the desire to pursue values); the value of a commodity is determined in the mutual interaction between the producer and the

[1]Sun Myung Moon, "Absolute Values and the Search for the Peace of Mankind," Science and Absolute Values (New York: International Cultural Foundation, 1981), 89-90.
[2]Lee, Fundamentals, 104-05.
[3]Sang Hun Lee, The End of Communism (New York: Unification Thought Institute, 1985), 248-255.

commodity, between the consumer and the commodity, and between the producer and the consumer; the purpose in determining value is the satisfaction, or joy, of both the producer and the consumer; the exchange value of a commodity is the amount of satisfaction, or joy (that is the amount of utility effect and profitability effect) whose monetary expression is price.[1]

Thus the producer has one purpose, to sell a product which people want and make a reasonable return. Thus he will make his customers happy by providing a good service, and himself by earning an honest living and serving others. The consumer has another purpose, to buy something which he wants for a reasonable price and to support the seller. Each judges what is reasonable by a subjective standard. Through give and receive action (haggling) they reach a mutually agreeable price. If neither likes the price no exchange will occur. Thus there is no coercion. Each has different purposes for the individual and the whole. However these can be harmonized in the market. The unifying overarching purpose for the whole, the purpose for the spontaneous order, is the desire on the part of both of them to realize value. This is something which is internal, reflecting as it does their respective attitudes to life. This purpose for the whole is not established by a coordinating body like the state or Planning Board. It is not the type of purpose which a deliberately designed and created thing would have.

3. Order and position

Every being has its own position in which it engages in give and receive action. Without position there can be no give and take and no order. For example if a teacher leaves his position there can be no education. Order is maintained by each being engaging in give and take in its proper position. In a football team, the positions are fixed by various arrangements. The Confucian emphasis on the rectification of names is similar to this:

Let the ruler be ruler, the minister minister; let the father be father, and the son son.

If people do not keep their position and fulfil the responsibilities that go with their position, order breaks down.

4. Harmony

When the above are fulfilled there can be harmonious give and take action. A football team in which each keeps his position and engages in give and receive action with the other team members is a joy to behold. The players on the field act as a team, generating a synergy which blends them and the ball into harmony. The ball seems to just land in the right place. In the spontaneous order the variety of groups, families, individuals, businesses, artists etc. blend to form a glorious tapestry of interlocking beauty.

5. Individuality and connectedness

Every being is both an individual truth body and a connected body. While retaining its own inherent character it interacts with other beings. While part of such an order, each maintains individuality and is enriched by the interaction. The individual is not subsumed under the whole. In

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[1]Ibid., 255.

fact in a spontaneous order there is extraordinary variety and uniqueness, as each creates his own niche.

6. Identity maintaining and developmental nature

Related to and following on from the above, every being maintains its own unchanging essence and yet it develops and changes. Give and take involves the exchange of elements so that every relationship changes a person in some way. This is one of the basic principles of dialogue that a person is changed through genuine encounters with others.

7. Circular motion

In give and take action, the object rotates around the subject. This can be literal as in the case of the solar system, or metaphorical as in the case of husband and wife.

E. Position of Existence

As a connected body, beings engage in give and take action that results in the establishment of an intricate order.

> As a connected body, a being is simultaneously both in the position of an object and in the position of a subject. As a result, numerous beings become connected to form a system of positions. This is what is meant by order, or an orderly system. Such a system is simply a reflection of the positions of subject and object in the Original Image, which are projected onto the created world.[1]

In Unification thought there are two types of order distinguished: vertical and horizontal. An example of vertical order in the universe is the moon rotating around the earth, the earth as part of the solar system orbiting the sun, the sun revolving within the galaxy of many suns, and the galaxies rotating around the centre of the universe. The ascending vertical order is like moving from one level in a hierarchy to another. The horizontal order is that of the nine planets revolving around the sun within the solar system. This order has come about naturally over aeons through the action of natural laws and forces on matter. It has also been directed from within by the universal prime force.

The human family is compared with the orderly system found within the universe. This is a normative and prescriptive and descriptive view. The vertical order in the family is: grandchildren, children, parents, grandparents, ancestors. The horizontal order is between siblings.

The order in the universe is maintained by give and take action, which is initiated and directed by universal prime force, which includes gravity as a manifestation. In the family order should also be established and maintained in the same way except through the force of true love.

In comparing human society with the solar system, Unificationism is not committing the naturalistic fallacy. However what is being asserted is the oneness of the human and natural worlds. There is one law which applies to both because God is the creator of both.

VI. Ethics

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[1]Lee, Fundamentals, 101.

When we come to ethics we see how order is conceived in the human and social realm. Ethics in Unificationism is distinguished from morality in that it is concerned with persons as connected bodies. Ethics is "the norms of human behaviour in family life."[1] Morality on the other hand is concerned with persons as individual truth bodies and the norms of behaviour in individual life. Morality is subjective, the conscience being the highest court of appeal. Ethical norms however are objective in the sense that they are in the public realm. Morality is based on the fulfilment of the first Blessing, to be mature. Ethics on the second blessing which is concerned with family relationships. Ethics and morality are, of course, intimately linked as few people are moral without being ethical and vice versa. It is in the family that people learn both. As stated in Divine Principle, the family should be the origin of laws for the society and the source of their authority and legitimacy:

> If the Israelites had not fallen into faithlessness . . . the family law of Moses could have been the substitute for heavenly law. Thus they could have entered Canaan without . . . the tablets of stone.[2]

The main basis for the Unification view of ethics is God's nature and purpose for creation, and the four position foundation where his ideal is to be realised.

The Original Image, as we saw above, is relational, having the dual polarities of *Sungsang* and *Hyungsang*, *Yang* and *Yin*. God created the world and mankind to be the objects of his love and the source of his joy. Love which is defined as, "the emotional force that the subject gives to the object and which makes the object rejoice" can only exist in relationship. The source of this love is heart, the emotional impulse to seek joy through loving and being loved.[3] The deepest relationship is that of love. God's desire was to have a deep relationship with his children. So God gave them Three Blessings. These Three Blessings were, based on an exegesis of Gen. 1:28, the ability to perfect one's character; the ability to establish an ideal family; and the right to dominion over the creation. In fulfilling them man would become like God, inheriting God's character of Heart, Logos and creativity. Man's original mind strives to fulfil these Three Blessings. Hence, at even the most basic level most people wish to grow up, have a family and earn an honest living. This inner drive is a manifestation of the universal prime force giving human activity direction and meaning. It does not require any planning. It happens naturally. Indeed it is unstoppable. The desire for the freedom to realise the Three Blessings has been behind many movements for social change and revolution.[4]

As pointed out earlier, these Three Blessings are very similar to the three Principles of Justice recognized by David Hume to be at the basis of civilization: stability of possession, its transference by consent and performance of promises. Hayek expressed these as several and private property, the family and honesty. George Gilder described the route out of poverty as

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[1] Ibid., 237.
[2] Divine Principle, 316.
[3] Lee, Explaining, 21.
[4] William Haines, "A Unification Theology of Liberation," unpublished paper, 1990. The pursuit of the original mind for the freedom to establish the first blessing led to the demand for freedom of religion; the second to the establishment of the rule of law; and the third to the right to several and private property.

"work, family and faith."[1] People have to work hard. Men who are fathers are generally more responsible, and it is in the family that values are learnt and transmitted. And,

> Faith in man, faith in the future, faith in the rising returns of giving, faith in the mutual benefits of trade, faith in the providence of God are all essential to successful capitalism. All are necessary to sustain the spirit of work and enterprise against the setbacks and frustrations it inevitably meets.[2]

These principles alone are sufficient to form the basis for an ideal society since, as Hume correctly realised, all other rules are derived from them. In a society where these blessings were fulfilled people would be honest and trustworthy, sensitive to the heart and feelings of both God and man. The family would be the basis of society and the wellspring from which would come righteous people. And these people would co-owners with God of the creation.

> . . . this joint ownership is that which includes private ownership appropriate for individuals, namely adequate possession by individuals. . . . The standard for "adequacy" is determined by one's conscience (original mind). If one understands Godism and comes to practice it, then the mind of love will work and the conscience will clarify the standard of adequacy necessary for oneself. God will notify one through one's conscience. . . . What one owns, one can freely dispose of.[3]

Thus a person who works hard becomes prosperous and will be able to help others. Of course a person who works hard and honestly and lives in a society which is also prosperous will be very wealthy and will not feel guilty about that wealth.

The desire of the original mind to fulfil these Three Blessings is the source of the dynamism of society and history. When we talk of God working in history it is the immanent God stimulating the original mind of man to pursue the realisation of these blessings. This is the source of the natural order found in society and the basis for the rules of just conduct. They are not rationally formulated but are naturally expressions of this innate desire.

One definition of ethics in Unification Thought is the "establishment of order."[4] This order is the order within human relationships. Human relationships should be based on mutual love and respect. There are norms within relationships which should be observed. It is within the family that we tacitly learn these norms and where love is experienced. It is here that a person should learn how to love and interact in an appropriate manner. For this reason ethics can also be defined as a "method of realizing love in a proper direction."[5]

The family is the place where God's love is to be realised. A family is composed of grandparents, parents, uncles, aunts, children and grandchildren, cousins etc. This is the place where a person can perfect himself, becoming rounded by learning how to relate comfortably and

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[1] George Gilder, Wealth and Poverty (New York: Basic Books, 1981), 68-74.
[2] Ibid., 73.
[3] Sang Hun Lee, "The Unity of Religions and of Thought Systems and the Construction of the New Cultural World," Unification Thought Quarterly (July 1990): 19.
[4] Lee, Explaining, 7.
[5] Ibid., 233.

joyfully in many different types of relationships, learning how to be a good child, brother or sister, husband or wife, father or mother, and grandparent.

Through these relationships God's *divisional* love can be realised. These divisions are parental, conjugal, and children's love. The problem is that in English there is only one word, love, which covers many different types of love which are qualitatively different. Thus people love their cats, wives, football, and going to the movies. This love has different directions and expressions. This lack of discrimination in English is a handicap as well as a source of confusion in relationships. Parental love is 'downwards' love, children's love is 'upwards', while conjugal love is horizontal. Love in fact has twelve directions, since each person in a four position foundation can be in the subject position to the other three positions. If we then expand the twelve basic directions between four positions to a real family with uncles, aunts and cousins, where there is a large network of relationships, we can see how nuanced they can become.

Each direction of love should reflect particular virtues. Virtues appropriate particularly in horizontal relationships are, reconciliation, tolerance, justice, sincerity, courtesy, modesty, compassion, helpfulness, service and understanding. Examples of vertical virtues are, filial piety, loyalty, obedience, respect, and clemency.

The three main divisions of love are actualized in the family. When a child loves as a child his or her relationship to the parents has a certain quality. There are proper ways for it to be expressed and also certain types of behaviour which are not permitted. These norms specify what is not acceptable, such as adultery and fornication, because they destroy love, the family and society. The same is true of conjugal love. This should only be experienced within marriage. There are norms which are standards for love. These norms themselves are the manners which Burke and Confucius emphasis. It is these norms which should become the basis of law and be protected by law.

The family then is the origin and foundation of the norms and values of society. They are then reflected in the ideology and social and political institutions as Emmanuel Todd recognized. Therefore to change the ideology of a society it is first necessary to establish ideal families based on true love. This will lead to a change of the community, society and nation. The political and social institutions will also naturally change to reflect this since *hyungsang* reflects *sungsang*. The attempt to change the society, the family and the individual through the imposition of order through the power of the state as has been attempted by politicians of every colour is based on a fundamental misunderstanding of the nature of reality.

There is, therefore, no rational blueprint like those of the utopian socialists waiting to be imposed or even democratically chosen. There is no static end-state towards which the world is moving that can be called the kingdom of heaven. The ideal world is a world based on principled relationships. Within this there is tremendous freedom for creativity, experimentation, innovation and progress. The ideal is one in which process is most easily facilitated. What will remain the same is the tradition of true love. The form this takes will vary from country to country, and from time to time. There will be change and development, variety and progress. The institutions of the kingdom of heaven will reflect the changed relationships in society. Instead of the state being the

source of authority, law, order, welfare, education and many other things, the family will be the basis of society. The functions at present done by the state such as education, health and welfare will be done locally, based on the family. There will be numerous voluntary associations of mutual-aid and self-help as well in which people can actively and creatively take up responsible positions in society. In this decentralisation, government will only be involved with the very few decisions that have to be made at that level.

CONCLUSION

This thesis has shown that there is spontaneous order in the natural world and in human society. The cosmos is not static but is dynamic, constantly changing with the generation of novelty and complexity. The categories of thinking inherited from the Greeks and embodied in language, though, have prevented the recognition of such phenomena until recently. The first people to see spontaneous order were the empiricists, who rejected metaphysics and sought to develop a descriptive approach to the world. However while this rejection of metaphysics and rationalism enabled them to form a more adequate understanding of the social order, it also meant that their philosophy was spiritually dry. It was unable to explain or recognize the spiritual dimension of life, and in Darwinism removed meaning from existence. Scientists who are only now starting to recognize the existence of spontaneous order and are developing a holistic approach, often turn to oriental philosophy for their metaphysics as Greek-influenced Christianity does not have adequate categories. Since we live in a society whose historical roots are Judeo-Christian, oriental philosophy is in some sense alien since it does not recognize the existence of a personal transcendent deity.

Unificationism, as a Christian philosophy based on oriental instead of Greek philosophical categories, is able to provide an ontological basis for the notion of spontaneous order. Because the immanence of God in Unificationism is emphasised the spontaneous order has direction and purpose. It is not random, nor merely directed by laws. There is thus meaning to the order which we discern all around us. This order is an explicate expression of the implicate order within the Original Image.

There are still problems within the Unificationist position though. The excessively anthropomorphic language and illustrations are misleading, even to the point of contradicting the Principle itself. Also the relationship between purpose and design has to be clarified. It is continually emphasised that without something having a purpose it has no meaning or direction. However spontaneous orders are purposeless in the sense that they are the product only of activity but not of design. So either purpose can be imputed to such structures, or it can be argued that universal prime force working within relationships establishes such orders for a purpose.

However despite such caveats, Unificationism can be developed in a way that is in agreement with and provides an ontological basis for spontaneous order as discovered in the natural and social sciences. A social, economic and political outworking of Unificationism could bear a strong resemblance to the political economy developed by Friedrich Hayek.

APPENDIX 1

ORIENTAL POLARITIES

The polarities in Chinese philosophy appear to be far richer than in Pythagoreanism. Below is a list from the *Ch'eng*, the earliest (250 B.C.) known comprehensive list of the binary oppositions in Chinese culture.[1] Good and evil are not included in either list which means that they are of equal value. The pairs are also not in conflict but are complementary and should be kept in balance. Thus the duality is a source of creative tension, is dynamic and open ended. It is also interesting that Derrida is often compared to Lao Tzu because the latter also inverted the traditional order by extolling femininity, and passivity. This he called the *wu-wei*.

YANG	YIN
heaven	earth
spring	autumn
summer	winter
day	night
big states	small states
important states	unimportant states
action	inaction
stretching	contracting
ruler	minister
above	below
man	woman
father	child
elder brother	younger brother
older	younger
noble	base
getting on in the world	being stuck where one is
taking wife, begetting a child	mourning
controlling others	being controlled by others
guest	host
soldiers	labourers
speech	silence
giving	receiving

[1]Angus C. Graham, <u>Disputers of the Tao</u> (La Salle, Ill: Open Court, 1989), 331.

APPENDIX 2

THE DESIGN ARGUMENT

What is the source of the order which is so apparent in the world around us? In Greek thought we saw that the source of order was imposed from outside. It was the Limit, *peras*, or the Craftsman. From this flows very easily the traditional proofs for the existence of God. But to say that God exists is to treat God as an object even if only a more exalted one. Aquinas' proofs for the existence of God all assume that God is the First Cause, such as that from design. Since it appears that the universe has been designed there must be a designer. The classic exposition was given by William Paley,

> In crossing a heath, suppose I pitched my foot against a *stone* and were asked how the stone came to be there, I might possibly answer that for anything I knew to the contrary it had lain there forever; nor would it, perhaps, be very easy to show the absurdity of this answer. But suppose I had found a *watch* upon the ground, and it should be inquired how the watch happened to be in that place, I should hardly think of the answer which I had given before.[1]

He marshalled a rich selection of examples, illustrations, arguments and evidence from the natural world to buttress his case.

Despite its fall from favour after the blows delivered by David Hume and then by Charles Darwin, the argument still finds its modern defenders. The most able and recent being that of John Leslie based on the "fine tuning" for life that appears to be evident in the universe. "The Argument from Design," he says, "is based on the fact that our universe looks much as if designed." The reason he says it looks as if it were designed is that, if there were minuscule differences in the values of the basic forces of the universe evolution and mankind would have been impossible.[2]

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[1]William Paley, Natural Theology: Selections, ed. Frederick Ferré (New York: Bobbs-Merrill, 1963), 3.

[2]John Leslie, Universes (London: Routledge, 1989), 25-56. Examples cited are:

1. The Smoothness problem: If the Big Bang was too ragged the result would have been turbulence and a cosmos of black holes. Richard Penrose calculated the chance of a smooth beginning at 1 in $10^{10^{123}}$

2. Expansion problem: To avoid not recollapsing within a fraction of a second or expanding so fast that galaxies never condensed, R.H. Dicke calculated that a 1 part in a million speed decrease when Big Bang 1 second old would have led to a recollapse before the temperature fell below 10,000K. A similar increase and the stars would never have formed.

3. Flatness problem: If the density at Big Bang was not within 1 part in 10^{60} space would not have been flat.

4. The theory of Inflation claims to solve these problems. A fast accelerated expansion of space would mean that the 10^{83} separate regions of space would not collide. But it also requires fine tuning. A change in the weak nuclear force or in gravity of 1 part in 10^{100} would upset the balance so that galaxies could not form.

5. Weak nuclear force controls proton-proton fusion. If it was a bit stronger all matter would have become helium and heavier elements. There would be no water etc. and the sun would explode instead of burning. If it was a bit weaker there would be only helium since the weak nuclear force makes neutrons decay into protons. The excess protons formed hydrogen.

6. Strong nuclear force: A 2% increase and quarks would not turn into protons and there would be no hydrogen etc. A 5% weakening would unbind the deuteron (Proton+Neutron) and there would be no elements heavier than hydrogen.

7. Electromagnetism: A change of just one part in 10^{40} would be catastrophic for stars. Slightly stronger and they would be red stars and too cold. Slightly weaker and they would be blue, very hot, radioactive and short lived. A doubled strength would mean 10^{62} years would be needed for life to evolve by which time all protons would have decayed.

8. Gravity: Gravity is 10^{39} times weaker than electromagnetism. A slight change in this proportion would be disastrous. At its actual strength it was possible for clouds to form stable stars which do not fragment.

9. Particle sizes: If particles were not the sizes they are their would not be a wide range of elements.

While he demonstrates that it is ludicrous to believe that order and complexity could have come about by random chance[1], he does not deal with the notion of self-generating order.

Obviously if it is possible to show that order and the appearance of design can develop without the need for a designer the argument cannot prove the existence of God, even the neo-Platonic one he argues for. His argument is very logical and persuasive, except that logic is linear and the universe works largely in a non-linear fashion. Whereas logic assumes causality, If A then B, Prigogine has argued that "the same cause does not always yield the same effect, either on the macro or on the elemental level."[2] Leslie though is not arguing that the order inherent in a bird is the result of design. Instead he is arguing for the design of the fundamental laws and constants of the universe as well as the initial state of the Big Bang.

The argument from design cannot be used to disprove the existence of God as Jonathan Wells correctly points out.[3] Wells however wants to defend the argument to design which he claims was that used by the major theologians of the main branches of Christianity:

> If God exists, then human beings are designed.
> God exists.
> Therefore, human beings are designed.[4]

As he points out, "a denial of design, in the argument *to* design, is tantamount to a denial of God's existence." Thus if it is possible to show that order and complexity can be spontaneously generated without an external designer, God does not exist. This then is why Foster though well versed in the latest scientific discoveries, does not deal with the evidence for spontaneous order. The result is that such an argument becomes fallacious as Arthur Peacocke explains:

> The fallacy of such calculations lies in their ignoring the actual processes whereby complex self-reproducing (initially molecular and macromolecular) systems might self-organise themselves entirely consistently with currently known thermodynamics and chemical kinetics; in ignoring the role of selection of organisation of macromolecules that have favoured reproduction rates and, once established, irreversibly channel the evolutionary process in one particular direction; and in ignoring the fundamental analyses of the architecture and evolution of complexity made by many authors.[5]

The alternative modern approach to Paley is that of Richard Dawkins who claims that,

> ...All appearances to the contrary, the only watchmaker in nature is the blind forces of physics, albeit deployed in a very special way. A true watchmaker has foresight: he designs cogs and springs, and plans their interconnections, with a future purpose in his mind's eye. Natural selection, the blind, unconscious, automatic process

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[1]See also David Foster, The Philosophical Scientists (New York: Dorset Press, 1991). He demolishes the infamous typing monkeys: "Allowing Huxley [the originator of the argument] all the monkeys there have ever been, typing for all the time there has ever been, there would still be a shortfall ratio of more than one hundred million millions, and that only relates to the chance of typing one line of one book in the British Museum."(let alone the works of Shakespeare), 56. The specificity of DNA is $10^{78,000}$ which require trillions of times longer than the universe exists to evolve by chance mutations and natural selection. 82.
[2]Ilya Prigogine, "Beyond Being and Becoming," interview by Marilyn Berlin Snell, New Perspectives Quarterly, vol. 9 (Spring 1992): 24.
[3]Jonathan Wells, "Darwinism and the Argument to Design," Dialogue and Alliance 4 (Winter 1990-91).
[4]Ibid., 77.
[5]Arthur Peacocke, God and the New Biology (New York: Harper and Row, 1986), 145.

which Darwin discovered, and which we now know is the explanation for the existence and apparently purposeful form of all life, has no purpose in mind. It has no mind and no mind's eye. It does not plan for the future. It has no vision, no foresight, no sight at all. If it can be said to play the role of watchmaker, in nature, it is the blind watchmaker.[1]

One way round this could be to argue not that what we find in nature is the result of design, but that the laws themselves which enabled and indeed encourage spontaneous order were deliberately formulated. This is the approach that Leslie takes.

The argument from design is also closely linked to what has come to be called the anthropic cosmological principle. This has recently been propounded and defended by Barrow and Tipler in a book by the same name.[2] The weak version of the argument is that,

> ...the properties of the universe we are able to discern are self selected by the fact that they must be consistent with our own evolution and present existence.

Thus if they were not we would not be here to observe the universe and ask questions about why it exists. Therefore our presence explains the "fine tuning" described by Leslie. They also isolate strong versions of the argument "the universe must have those properties which allow life to develop within it at some stage in its history" that have been propounded in the past:

a. Fred Hoyle, the advocate of a steady state universe who argues that there exists one possible universe designed with the goal of generating and sustaining observers.

b. The 'participatory anthropic principle' proposed by John Wheeler in which observers are necessary to bring the universe into being. This is not unlike Bishop Berkeley's "to be is to be perceived".

c. Their own 'final anthropic principle' in which intelligent information processors must come into existence in the universe and once they do it will never die out. It is a teleological argument which sets out to update and correct Teilhard de Chardin's work. Things are the way they are because they were designed.

Barrow and Tipler's work has been heavily criticised. The weak argument because it is a tautology, and the strong for its highly speculative if imaginative science.

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[1] Richard Dawkins, The Blind Watchmaker (Essex: Longman Scientific &Technical, 1986), 6.
[2] John D. Barrow and Frank J. Tipler, The Anthropic Cosmological Principle (New York: Oxford University Press, 1986).

APPENDIX 3

SOCIALISM

Igor Shafarevich carried out an exhaustive survey of socialisms, past and present, theoretical and actual. He examined the socialism of antiquity, such as Plato; the socialism of the heresies, such as the Cathars; the socialism of the philosophers such as More; and the state socialism found in the Inca Empire and ancient Egypt. He concluded that there are four basic principles manifested in the activities of socialist states and ideologies; the abolition of private property, the abolition of the family, the abolition of religion and equality or the abolition of hierarchy in society.[1]

As Marx and Engels expressed it so succinctly in the <u>Communist Manifesto</u>, "the theory of Communism may be summed up in a single sentence: 'The abolition of private property.'" This is actually expressed either as the communality of property or as the state ownership of the means of production. It should be borne in mind that in many supposedly non-socialist states, including the U.S.A., the state owns a disproportionate amount of property. It also controls a large proportion of the G.N.P. through taxation. The state also becomes more and more involved in the regulation and planning of the economy so as to make it conform to some conception such as "social justice."[2]

The majority of socialist doctrines proclaim the abolition of the family. This takes many forms. In some this goes as far as free love and the community of wives, in others the weakening of family ties, but in all the subjugation of all relationships to that of the state. Thus the family is stripped, supposedly in the name of liberation, of the very functions that give it meaning. Education, welfare, health are all taken over as the state provides for everything from the cradle to the grave. In Sweden altruistic behaviour towards one's family is denigrated, being called *familyjeegoism*. A good socialist should not prefer his family to other people or groups, but rather his first loyalty should be to the collective, to society or *folkshem* (a word derived from the German *Volkheim* of the thirties.[3] Peter Winch criticizes the new notion of friendship being advocated for the modern social worker:

> ...it is the duty of a social worker to establish a relationship of friendship with her clients; but she must never forget that her first duty is to the policy of the agency by which she is employed. Now that is a debasement of the notion of friendship as it has been under-stood, which has excluded this sort of divided loyalty, not to say double-dealing.[4]

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[1]Igor Shafarevich, <u>The Socialist Phenomenon</u>, trans. William Tjalsma (New York: Harper and Row, 1980), 194-201.
[2]Hayek has through a detailed analysis shown that social justice as advocated today is a contradiction in terms as it involves the violation of the rules of just conduct. F.A. Hayek, <u>Law, Legislation and Liberty</u>, vol. 2, <u>The Mirage of Social Justice</u> (London: R.K.P. 1982).
[3]Gerard Radnitzky, "The Evolution of the Social Order," in <u>Organisation and Change in Complex Systems</u>, 174.
[4]Winch, 123.

The values of the state inform education, and family values are pushed aside by the advocacy of homosexuality. Prejudice and discrimination, the very important mechanisms for the enforcement of social taboos against immorality and perversion are legislated against in the name of abstract human rights.

Hostility to religion by socialism is well known. The heresies were strongly hostile to established religion while state socialism, being unwilling to brook any challenge to its power tries to suppress or at least marginalise it. Religion is replaced, by Owen with a rational religion, and in socialist states a ruler cult. The same is true in ancient Egypt, the Inca empire as well as modern ex-communist states. The state makes the laws and decides what is right or wrong. The ideology of the state becomes the truth. Naturally any other "truths" are threats and have to be destroyed.

The pursuit of equality is well known. It starts as a demand for equality of opportunity (itself a chimera) but soon becomes Procrustean demand for equality of outcome. This demand too progresses from legal equality, to material equality, to social equality, to educational equality, to dress equality, to equality of intelligence and finally to equality of appearance. As Verkhovensky says in Dostoyevsky's The Possessed "In my opinion even men and women with particulary attractive faces should be prohibited." This scenario has been described by L.P. Hartley[1] where girls with gamma faces can have cosmetic surgery and become beta ("Beta is best!"). However the envy towards those with alpha faces and the importance of removing sources of social conflict soon pushes alphas to have their faces suitably altered. This pursuit of equality is largely motivated by guilt and envy. It leads to the abolition of existing self-generated order of society based on tradition, but always ends up replacing it with something in which the faults of the former are greatly magnified. The natural consequence of this is the attack on individuality, which is usually disguised as an attack on individualism and the promotion of the collective. The Polish poet and Nobel laureate Czeslaw Milosz described an individual responding to this situation by thinking one thing, saying another, and doing a third thing.[2]

Socialism is accompanied by the politicization of society, in which every issue becomes political. The private sphere shrivels as every decision is democratically decided and imposed. The state comes to invade every part of civil society as it remakes it in its own image and likeness. The bureaucratic way becomes the only way.

Professor Hartwell has described the consequences of this growing politicization of civil society where the state for the people's own good tries to take over and regulate every sphere of civil society:

> "Up until our own times," Benda wrote, "men had only received two sorts of teaching in what concerns the relations between politics and morality. One was Plato's, and it said: 'Morality decides politics'; the other was Machiavelli's, and it said: 'Politics have nothing to do with morality.' Today they receive a third. M. Maurras teaches: 'Politics decide morality.'
>
> In working, living and believing the state is now arbiter. It decides about the work place, about the family, and about values. Since the market is no longer

[1] L.P. Hartley, Facial Justice (Oxford: Oxford University Press, 1963).
[2] Czeslaw Milosz, The Captive Mind

allowed to function freely, the state must decide what to produce and how to distribute that production; since the family as a social unit has declined because of the erosion of parental responsibilities largely as a result of state action, the state must decide about education, health, behaviour, and all other aspects of growing up and earning a living; and, finally, since the state decides what values should prevail in society, and ensures that such values are embodied in legislation and enforced by bureaucracies, the state has increasingly replaced the church in determining how we should behave. Politics is now religion.[1]

When we look later at the nature of society, we will see that socialism destroys the very foundations of civilization. It is inimicable to what are called in Unificationism the three great blessings. In this sense it can be correctly regarded as demonic.

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[1]R.M. Hartwell, introduction to The Politicization of Society, 23-24.

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