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Ponti Venter

'Nature', 'law', 'humanity' — the rise of Positivism, with reference to Quesnay, Turgot and Comte

Summary

The positivist expansion of the metaphorical conception of (natural) law over all aspects of human life (ending in technicism) dialectically denies the supposedly autonomous rational control of humankind (modernity, Kant, Marx). The two meanings of natural law — the moral and the physical — were unified by the physiocrat Quesnay in a single formula stressing both the advantage of humankind and humanity's dependence upon the subhuman environment. Another physiocrat, Turgot, understood human history in terms of inevitable laws of progress, and stressed the fundamental role of natural necessity in human social formations. Auguste Comte, attempting, like Quesnay, to unify the moral and the physical, completed the natural science approach to human life, which forced him to find a natural divinity in Humanity in order to give meaning to human life, but the course towards naturalism had already been set.

'Natuur', 'wet', 'mensheid' — die opkoms van die Positiwisme met verwysing na Quesnay, Turgot en Comte

Die positiwistiese uitbreiding van die metaforiese konsepsie van 'n (natuur)wet wat alle aspekte van die menslike lewe beheers, ontken dialekties die veronderstelde outonome rasionele beheersing van die natuur deur die mens (moderniteit, Kant, Marx). Die twee natuurwetopvattings — naamlik as 'n morele en as 'n fisiese wet — is deur die fisiokraat Quesnay tot een formule verenig, waarin sowel die voordeel van ons mensheid as ons afhanklikheid van die benede-menslike omgewing beklemtoon is. 'n Ander fisiokraat, Turgot, het die menslike geskiedenis verklaar in terme van die onvermydelike wette van vooruitgang, en het die fundamentele rol van natuurnoodwendigheid in menslike samelewingsvorming beklemtoon. Auguste Comte het soos Quesnay gepoog om die morele met die fisiese dimensie te verenig, en so die natuurwetenskaplike benadering tot die menslike lewe afgerond, waardeur hy gedwing is om, ter wille van singewing aan die menslike lewe, 'n natuurlike godheid, die Mensheid, te poneer. Die beweging na naturalisme was egter teen hierdie tyd reeds gevestig.

Prof J J Venter, Dept of Philosophy, Potchefstroom University for C H E, Private Bag X6001, Potchefstroom 2520; E-mail: filjjv@puknet.puk.ac.za

A careful study of a recent representative of positivist theory, such as Skinner's behaviourism, presents us with the strange picture of an apparent anti-humanism as the outcome of humanism. In *Beyond freedom and dignity*, Skinner disposes of two concepts relating to established human rights: freedom and dignity. Asking questions about the background to this is no mere academic exercise, since the right to human dignity, for example, is specifically protected in the German and South African constitutions, as well as in the UN Bill of Rights. Skinner subverts these concepts in the name of a natural scientific approach to human behaviour — an approach also found earlier in the works of psychologists such as Freud and Watson, the linguist Bloomfield, and the physicist Einstein (to name but a few), and which has a history reaching back via early Positivism to early capitalist theory and to Descartes. Kurt Bayertz (1996: 86) summarises the Skinnerian approach and its consequences as follows:

> Human subjectivity does not exist — and this is the true kernel of Skinner's theory — beyond Nature, but is part of it and resides within it. By making its physical nature an object, the human being also makes its subjectivity an object — and thus a part of Nature. The strict difference between subjectivity and Nature, which forms the basis for the concept of human dignity, disappears. Briefly: there is no room within a scientific picture of humanity for the idea of human dignity. In its scientific self-interpretation, the human being positions itself 'beyond freedom and dignity'. [...] Nothing could be more short-sighted at this point than the objection that this scientific penetration and technological control only apply to the natural side of the human being, not to its spiritual side and subjectivity. Hopes of saving the 'inner' human being with this kind of dualism have always turned out to be naïve. The human spirit is very much part of this world; it has a natural basis. The subject may not coincide with the body, but neither can it be separated from it. Technological access to the body will therefore not stop there: at some time or another, it will also affect the subject and its spirit.

1. Relevance

The control of the world with the help of science has a long tradition in modern thought — Descartes (1969: 49) believed that the study of the laws of nature would "render ourselves lords and possessors of nature". One of the acute problems in this tradition was: what is to

be included under "nature"? Or: what influence does "nature" have over human life, especially rational thinking? Of course Descartes elevated human subjectivity above that kind of nature which is studied in the natural sciences, with the help of a strict opposition between thinking and extended substances. But as ontology became progressively historicised (and naturalistic in some respects), these questions became more acute. On the one hand it was maintained that progress and the control of nature are the task of reason (which somehow occupied an Archimedean point above nature) and, on the other, that the ascendancy of reason to the throne of history was a product of nature (cf Venter 1999a: 31-38). The adherents of the tradition of scientism invested in the naturalist version of the new ontology. Their clash with the ideas of "dignity" and "freedom" was that these normative ideas imply that human beings are special and frustrate the attempts of scientists to be also "lords and possessors" of humankind.

According to Habermas (1987: 3-15) the (incomplete) project of modernity has been the emancipation of humankind. At a deeper level this emancipation has meant a horizontalising of ontology: the ancient and medieval belief in the dependence of the world (and specifically humanity) on a "supernatural" power or a transcendent creator in whom the meaning and destination of life are concentrated was gradually replaced by an ontology which is centred in humankind (cf Venter 1999a: 21-38). This historicised ontology replaced the older transcendent destination of humankind with a new one: progress in using reason to control humankind's subrational side and the natural environment, and retro-projected the line of progress into a past, purely "natural", origin for humanity. This kind of ontology is expressed by thinkers like Rousseau, Turgot, Kant, Hegel, Comte and Marx. Humankind is suspended between origin (dependence upon "nature") and "reason" (control of "nature") — a new (determinist) dependence for the emancipating human being. As Kant (1975b: 33), the supreme spokesman of human rational autonomy, says: the freedom of the human will in the form of action is "determined by the force of natural law, precisely like every other natural event". And behind the narrative of emancipation and progress — a utopian narrative expecting world peace and a moral order — lurks a difficult

problem: human beings are killing, oppressing, defrauding, and enslaving one another: in other words the problem of "evil". Evil is then woven into history as a necessary mechanism of progress provided by nature, and the rule of reason — as the new supreme good — is postponed so that nature can fulfil its purpose with humankind. This is the legacy Turgot leaves to Kant.

The outcome of this tension is ironical. The autonomous human subject was supposed to be in control of nature, by means of both science and practical rationality. But Skinner and Bayertz deny precisely this autonomy with regard to nature: humankind is viewed as controlled by its natural tendencies, governed by the laws of nature, and therefore controllable by natural science and by technology based on that science. "Nature" in this context is understood as primarily those aspects of "reality" which are studied in the natural sciences (physics, chemistry, biology, the medical sciences and psychiatry). The concepts of "law" and "nature" with special reference to human life are at issue. How did this philosophically ironic situation of the inversion of human autonomy and control of nature come about?

As early as the seventeenth century, capitalist economics considered the actions of the price mechanism as an inevitable law of nature for human action. This approach made it difficult to formulate the task of the state with regard to economic justice. Individual self-interest was believed to act in a necessitarian way and to be in itself advantageous to the state, while intervention by the state was considered futile and mischievous, by definition. Some social scientists, such as Petty and Hobbes, understood the terms "nature" and "natural law", as used in the human sciences, from the mechanical perspective of the natural sciences. As a consequence the normative leeway implied in the medieval understanding of "natural law" as well as in Locke's doctrine of natural rights disappeared, and "natural law" acquired the same inevitability in the social and human disciplines which Descartes attributed to it with regard to extended bodies.[1]

"Law (of nature)" is a metaphor derived from human legislative life. The full metaphor included that of the lawgiver (God). The idea of God here is more than the abstract keystone which sustains the me-

1 Cf further Ekelund & Hebert 1983: 39ff; Chalk 1951: 335ff.

taphoric arch. For Locke (in debate with Hobbes) the recognition of the lawgiver is a presupposition for recognition of the real law character of the law of nature (cf Laslett 1988: 80). Newton, although using the Euclidean model for the structure of his *Principia*, set strict requirements of empirical foundations in the study of the laws. His more voluntarist idea of God allowed for changeability and therefore he preferred a limited *a posteriori* approach (cf Van der Hoeven 1979: 90ff). Descartes, on the other hand, was nearer to the intellectualist tradition of scholastism, and founded his laws in the immutability of God, as expressed in *a priori* axioms in human reason (cf for example *Discourse on method* V, 1969: 33). This had the consequence that in Descartes the law was considered absolute, even with regard to the lawgiver.

The perspective of law and the lawgiver has important implications for human life. We have already noted that economic determinism poses the question of justice. But more is at stake here. How should we conceive of the relationship between the two "laws of nature" — the Cartesian necessity of mechanical bodies and the Lockean natural law of freedom? Quesnay, the eighteenth-century physiocratic economist, tried to sustain both meanings and to inter-relate them — precisely by means of the idea of the control of subhuman nature to the advantage of humankind. Although he supported human freedom, the subhuman was given a special status in the hierarchy of the two natures by defining the human ethic of natural law in terms of the subhuman process of natural law, which had already been defined in terms of control. Physiocratic economics accentuated the dependency of humankind on subhuman nature, and simultaneously continued the mercantilist insistence on market freedom as inevitable natural law. *Vis-à-vis* the "supernatural" in the Catholic tradition, Quesnay stressed the role of "nature" in both senses, but tended to define the one in terms of the other, such that ethics was adjusted to the physical advantages of humankind. He still understood "evil" in terms of individual responsibility as the bad use of freedom.

Turgot, who shared the principles of physiocracy with Quesnay, went further along these lines, developing them into a doctrine of progress. He still distinguished between the linearity of human history and the cyclical necessity of nature, but considered the law of human progress as no less inevitable than that of natural necessity.

The "lawgiver" and governor of the universe (of Descartes, Newton, and Locke) thus disappeared behind autonomous human progress (the historicising of ontology), and along with it the sense of enduring transgression of the "laws". Progress away from all evil had to occur by some necessity in humankind itself. Turgot understands progress in terms of three necessary phases of intellectual maturation, ending in a rational situation of peace and justice. He anticipated Kant, Adam Smith, Marx and the social Darwinists in understanding the evil which human beings perpetrate against one another as a necessary mechanism of progress. In fact the Hobbesian idea of human nature (the war of all against all) becomes the way in which humankind moves to its rational utopian destiny. And the physiocratic sensitivity for human dependence on physical nature becomes the only determining factor for the structure of society and relations among human beings. Thus the tendency in Adam Smith and Marx to explain a mental, cultural superstructure in terms of a material base finds its origin in Turgot. The explanatory value of the natural environment (for eventual good or temporary evil) became stronger, and Turgot accentuated this by proposing mathematical language as the only real scientific language.

Auguste Comte, who inherited Turgot's law of the three phases, completed the natural science approach to humankind in his early works. But as a mature thinker, he found that in such an approach life loses its meaning, and intellectuals remain stuck in the details of the natural (physical) sciences. Quesnay's definition of physical law in terms of advantages for humankind seems to lose its validity. The automatic destination given by nature (in Turgot and Kant) has no significance for moral action — humankind is delivered over to its base, egotistic instincts, with no neutralising factor. Thus (as opposed to the "supernatural" divinity), Comte introduced a "natural" divinity, "Humanity", as source of inspiration in a humanistic religion, and attempted to re-open the way to a dualist view of the relationship between body and soul. His mature arguments for the irreducibility of different law spheres distinguished by virtue of this dualism represent an attempt to neutralise the consequences of his insistence on the singular dependency of humankind upon its environment. With the help of the religion of humanity, he tried to open human

culture to love but, remaining in historical ontology, he found no escape from the determinist claws of scientism with its physical necessities. The combination of scientism and collectivism under the influence of Comte is analysed in depth by Von Hayek (1952). Comte does, however, temper rationalism in two ways. On the one hand he tries to allocate some leadership to the "heart" (sentiments), and on the other he moves in the direction of pragmatism by allowing practical needs to determine the direction of natural science.

Positivism did not appear overnight. It is the product of a long struggle by modern humanity to take the future completely into its own hands, believing in its own ability to structure nature according to its own plans, while struggling with the fact that it is itself part of that nature. Finally, the human being is becoming the object of planning expertise, even after the collapse of the claims of reason. The vexing question now is: who controls the controllers in a society where managerialism — a recent form of technicism — is fast replacing both political despotism and democratic decision-making?

2. Quesnay (1694-1774) — natural rights and the two types of natural law

Quesnay[2] finds himself in the pre-revolutionary French Enlightenment, participating in the broader philosophical discussion about human rights and, in the aftermath of mercantilism, trying to defend the freedom of the market on the basis of divinely given "natural law". Natural rights are founded in "natural law", and he argues that natural law (in both a physical and a moral sense) refers to the regularities concerning the advantages to humankind inherent in the use of the physical cosmos, on which humankind depends. He follows the age-old idea that "natural law" is accessible to reason by way of evidence, but that reason needs the enlightenment of education in order to live a really human (dignified) life according to this basic law. We need to approach Quesnay's use of "natural law" in the context of

2 Francois Quesnay studied medicine and was a doctor at the French court. He developed the economic theory of physiocracy (literally "nature rules"), and had a considerable following for some time. Physiocratic economics denied creativity to any economic sector except agriculture, and its influence soon faded.

the contrast between the natural and the supernatural as well as in the more specific context of his idea of natural rights. Quesnay recognises a supernatural order (as if not to alienate the Catholic society in which he was working), but his focus is secular. His analysis is limited to the natural order, which he understands in terms of natural law. His cross-definition of physical natural law and moral natural law in terms of each other seems dialectical.

2.1 Natural rights

Quesnay attempts to reconcile the contradictory viewpoints of the philosophers of his time concerning natural rights. He defines a natural right "vaguely" as "the right which a human being has to things proper to his/her enjoyment" (Quesnay 1965a: 359). Natural rights are those rights which nature has assigned to us, for example, the right to light which all human beings have to whom nature has given eyes: to deny this to any of them would be violating the order established by the supreme intelligence (Quesnay 1965b: 754). He also circumscribes natural rights as the "natural principle of all the duties of man regulated by reason" (Quesnay 1965a: 364). Babies, even though they lack intelligence and bodily strength, have a natural right to subsistence from their parents — a parental duty supported by the even stronger power of affection. This duty falls into the area of justice, since parents owe their children what they received from their own parents. Justice constitutes a rational obligation, defined as "a natural and sovereign rule, recognised by the light of reason, which determines evidently that which is due to oneself or to another" (Quesnay 1965a: 365).

Natural right is distinguished from legal right precisely in that the former is known by reason by way of evidence and constitutes without any constraint an obligation through this evidence alone, while legal rights are limited by positive law, obligatory through the sanction of law, and known solely through the contents of the promulgated law (Quesnay 1965a: 365). Natural right, as the right to subsistence and to that which is proper to one's enjoyment, is not a right of everybody to everything, but rather a right to that which one can procure by means of labour, given differences in talents and environments (Quesnay 1965a: 366ff). In this Quesnay appears to follow Locke, who understood the right to property on the basis of work as

the basic right awarded by natural law (for even one's person is property) (cf Locke 1988: *Two treatises of government* II, v, 27).

From the above it is clear that Quesnay sees the basis of natural rights as consisting in duties, which are linked to subsistence and proper enjoyment, and which are recognisable by reason. Duties, as we shall attempt to show, are part of natural law. Enjoyment and subsistence link these duties to non-human nature. It is clear that "natural law" encompasses much more for Quesnay than the laws of the non-human or the subrational, and we shall have to ask what is the relationship between the human and the non-human in the natural order as well as how the natural order is related to reason and freedom.

2.2 Natural law

Quesnay sees the establishment of larger communities composed of families as to the advantage of natural rights, on condition that they are constituted on the basis of those natural laws that can provide the best possible government. For Quesnay, therefore, there is no state of nature that ends when civil society begins — "nature" is always present. Thus human beings in society have to subject themselves to both natural and positive laws. In this context he gives a clear definition of natural law:

> Natural laws are either physical or moral. One understands here by physical law the regulated course of every physical event which is evidently the most advantageous for humankind. One understands here by moral law the rule for every human action conforming to the physical order which is evidently the most advantageous for humankind. These laws form the ensemble of what is called 'natural law' (Quesnay 1965a: 374-5).

This is a fascinating formulation of natural law. On the one hand it is peculiarly humanistic, with the physical laws limited to those regularities which are to the advantage of humankind. In fact, in a footnote Quesnay recognises that that natural order which is to the greatest advantage of humankind may not be equally to the advantage of other animals, but the Author of nature, he says, has given humankind the natural right by virtue of intelligence to make his part the best possible. On the other hand the formulation tends in the direction of a kind of "naturalism", for it defines the natural laws for morality as conforming to the physical order. The conception ap-

pears to be dialectical — a tension between the advantage of humanity and conformity to the natural order. Natural law is framed into human advantage (a discourse of mastery?) and, on the other hand, subjection to the natural order is prescribed. In Kant this tension reappears when he attempts to sustain both the argument that "nature" is the origin of rational mastery and the contention that reason transcends nature in its mastery of nature (cf Venter 1999a: 31ff).

Although quite subtle, the relationship between humankind and non-human nature here takes the direction of exploitative domination. This tendency to move the reference of "natural law" in the direction of the physical sphere and to connect it to human domination of "nature" can be found as early as Descartes (*Discourse on method* VI, 1969: 49). But Quesnay goes two steps further: he makes one single formula of physical law and human advantage, and also converts this into a presupposition for moral natural law. Kant later (1787) proposes a more radical formulation of the same idea, suggesting that (non-human) natural laws are actually imposed on nature by a planning reason (cf Kant 1975a: 23-4). And Comte is in the spirit of Quesnay in his attempt to unify the physical and moral laws to the advantage of humankind, expanding this into a religion of humanity (as will be argued below).

On the other hand Quesnay also limits natural morality by demanding that it conform to a humanistically understood physical order. This means that government has to establish a legal structure conformable to both the moral and the physical order. The importance of the physical order — in the sense of environment — to human society had already been stressed by Machiavelli and Bodin. In physiocratic thinking, however, it became a cornerstone of social thought. For the foundation of society is, first, the subsistence of human beings and, secondly, the wealth necessary to protect it (Quesnay 1965a: 376). This partly explains the physiocratic preference for agriculture: believing that the natural order was established by its Author for the overall good of the universe, and viewing agriculture as that part of the culture of physical reality which is most advantageous to humankind (the only culture which is supposed to supply a renewable surplus value). Government was encouraged to take into account the natural laws which sustain the creation of wealth, and to

rid itself of any positive laws conflicting with those natural laws, rather than to blame the farmers for a lack of bread (Quesnay 1965a: 369). Quesnay feels his way in the direction of a base-superstructure model — resembling that of Marx — when he says that the form of societies depends more or less on the goods which each member possesses. Groups which possess only movable property can be nomadic, but those which have immovable property need a different type of government (Quesnay 1965a: 372ff).

This side of Quesnay's thought prefigures the early positivism found in Turgot. In fact, even Comte vacillated between domination by the physical environment and the power of humankind in terms of the engineering of nature. And the dialectical materialism of Marx was probably the most elaborate expression of this struggle.

In Quesnay, both moral and physical good have their origin in the natural laws. Each has its own essence and characteristics, conforming to the aims of its Author who, being the Author, is superior to both — here, the metaphor of the divine lawgiver reappears. The same laws which produce good, also produce evil. Natural laws that produce rain also produce floods, but in totality they are intended for good. Humankind has been given intelligence to draw the best advantages from them and to avoid those evils which are predictable. This also means that every human being has the natural right to use his/her faculties (Quesnay 1965a: 370-1).

2.3 Freedom

Regarding both moral and physical evil, a different cause comes into operation in human life — the misuse of freedom. Quesnay moves some distance from the positivist direction in viewing freedom as the essence of humankind (thus approaching the views of Locke).[3]

3 "This brings us to a different cause of the physical evil and moral evil, which is of another kind than the physical laws; it is the bad usage of human freedom. Freedom, this constitutive attribute of man [and] which man would stretch outside its boundaries, seems to man to never be at fault: if he does damage to himself, if he destroys his health, if he wastes his belongings and ruins his family by the bad usage of his freedom, he blames the Author of his liberty; when he would want to be even freer; he does not realise that he is in contradiction with himself" (Quesnay 1965a: 369).

For Quesnay freedom is real — he explicitly rejects determinism in an extensive analysis of freedom. The soul is not simply determined by extrinsic and physical causes, but also by a confluence of operations which are peculiar to it and which change the whole mechanism of physical impulses preceding decision-making (Quesnay 1965b: 752). Freedom is not unlimited and indeterminate, as if it concerned arbitrary decisions to act or not to act; it has boundaries in the natural order, which act as resources for decision-making. It needs to be preceded by good education, expansion of knowledge, the power of good habits, and the power of legitimate motives. Quesnay adds supernatural support to this list (Quesnay 1965b: 754; cf also 1965a: 369-370). Freedom, therefore,

> [...] is a faculty relative to motives which are both inciting and surmountable, which counterbalance and weaken one another, and which present opposing interests and attractions, which reason, more or less enlightened and more or less preoccupied, examines and evaluates (Quesnay 1965a: 369).

Natural law therefore does not eliminate freedom in Quesnay, but the position of freedom in Turgot and Comte is much more precarious.

2.4 Natural law, rationality, education and government

Both natural law and freedom are directly linked to rationality. Quesnay did not escape the Enlightenment atmosphere and its form of rationalism. We have already indicated above that reason knows the natural laws by way of evidence, and it is also clear that the deliberation of reason is the concrete manifestation of freedom. When we want to know the order of time and place in order to navigate, Quesnay argues, we need to calculate very precisely the laws of movement of the heavenly bodies. In the same way, when we want to know the extent of the natural right of people united in society, we have to focus on the natural laws which are constitutive of the best possible government — which will have to be the most advantageous government, in both the natural and the positive order (Quesnay 1965a: 374). Epistemologically Quesnay remains in the Cartesian and Scholastic tradition in which natural law was considered evidentially (*a priori*) knowable; one could therefore trust in reason to show the way to the best possible government.

Quesnay probably has in mind a government that allows for the free play of market forces and promotes the welfare of agriculture. This demands education. The first and most fundamental positive law should be education, both public and private, in the natural laws that are the sovereign rules of every human legislation and of every civil, political, economic and social behaviour (Quesnay 1965a: 375). As in Cicero, Bodin and Locke, natural law is here again the standard against which civil law is to be evaluated (cf Willey 1961: 14ff; Bodin [*sa*]: 29; Locke 1988: *Two treatises of government* II, ii, 6).

Without education, the actions of government and citizens are unintelligible and even anarchic. Without knowledge of the natural laws which have to serve as the basis of legislation and rules of behaviour, there is no evidential understanding of the just and the unjust, of natural rights, of the physical and moral order, of the essential distinction between general and particular interests, of the reality of causes of the prosperity and decline of nations, of the essence of moral good and moral evil, or of the sacred rights of those who govern and the duties of those who have to obey (Quesnay 1965a: 375-6). The knowledge of natural law thus covers a wide range of evidential (rational) insights.

Although there are many deviations from this due to human imperfection, positive law is supposed to be none other than the exposition of the natural laws that are constitutive of the most advantageous order. The "most advantageous order" here means that order which is most advantageous for the sovereign, for what is really most advantageous for the sovereign will also be most advantageous for the subjects. It is only the dominance of the science of these supreme laws that can assure tranquillity and prosperity in a nation. Where this is the case, it will be impossible to propose an unreasonable law, for both government and citizens will soon discover the absurdity of this. This is particularly true for the subsistence of the nation and the means to defend it — if the "flame of reason" enlightens the government, laws detrimental to society will soon be taken off the books (Quesnay 1965a: 376). The trust in reason here rationalises something of the nature of an enlightened monarchy or dictatorship[4] — a monarch need only be rational. Quesnay still echoes Bodin's

4 Quesnay (1965c: 330ff) rejects a multiparty system as government by the stronger.

theory of the absolute, sovereign monarch (cf Bodin [*sa*]: 28), and stands at some distance from Locke (cf *Two treatises on government* II, ii, 6) in this regard. This position is a little more complicated than a simple trust in rationality, however. His rationalism is of the softer kind, which still refers to a proper object (although, as we have seen above, this object is only known evidentially), and which requires the development of reason by means of the study of natural laws.[5]

Reason by itself is not enough to guide behaviour; knowledge is needed for dignified behaviour. Ignorance is the primal attribute of the brute and isolated person; in society this is disastrous, even a crime. For the human being with its intelligence ought to elevate itself above the brutes, since ignorance is the main source of evil for humans and "of his indignity towards the Author of nature, the eternal light, the supreme reason and the cause of all that is good" (Quesnay 1965a: 377). In this regard Quesnay's doctrine is somewhat more sophisticated and less optimistic than that of Locke, who identified natural law with reason itself (cf *Two treatises on government* II, ii, 6). In short, for Quesnay it is enlightened reason which is the guide and in fact the sustainer of society. His understanding of "enlightenment" therefore goes in the direction of rationality disclosed into full understanding of the laws of nature in their evidence.[6] This perpetuates Stoic epistemology (in opposition to skepticism) regarding the knowledge of natural laws, but given a new inspiration by enlightenment rationalism and its educational (emancipatory) focus. It is taken further in Kant's (1975d) well-known essay *Was ist Aufklärung?* On the other hand Quesnay al-

5 "We are talking here about reason exercised, expanded and perfected by the study of the natural laws. For [the] simple reason alone does not elevate man above the brute animals; it is in principle only a faculty or an aptitude by which man can acquire the knowledge which is necessary for him and by which he can, with his knowledge, procure for himself the physical and moral goods essential for the nature of his being" (Quesnay 1965a: 376).

6 But the enlightened reason, guided and arrived at the point of knowing with evidence the course of natural laws, becomes the necessary rule of the best government possible, where the observation of these sovereign laws will multiply in abundance the wealth necessary for the sustenance of the people and for the maintenance of the tutelary authority — the protection it provides warrants for human beings, united in society, the ownership of their wealth and the safety of their persons (Quesnay 1965a: 377).

ready attributes the difference between humankind and brute animals to education.

Thus natural rights are extended insofar as one is directed towards the observation of the best laws, those that constitute the most advantageous order for human beings united in society. What is more, as in Locke (cf *Two treatises of government* II, vi, 57), these laws do not limit human freedom, for evidently they are "the object of the best choice of freedom". Humankind cannot reasonably refuse to obey these laws, for otherwise its freedom will be detrimental to itself and to others — it will be the freedom of a madman (Quesnay 1965a: 377).

The concepts of natural rights, natural law, freedom, and rationality, all coalesce in these last sentences. Natural right in society is clearly connected with the advantage of humankind, which, as has been seen, encompasses both the physical and the moral order. And natural rights are based on the observance of these advantageous regularities, of which the observance is not only rational but also an expression of real freedom.

Quesnay was also struggling with the deeper problem of legitimising the structuring of society as well as its positive laws. He defended an absolute justice (cf Quesnay 1965b: 755ff) situated in the natural order, specifically in reason's relationship to natural law. This order of justice is in turn legitimised by supposing that the natural order was instituted by a Supreme Intelligence who, by virtue of being the one who instituted it, is itself elevated above this order. This is reminiscent of a very long tradition about natural law, which can be found in Thomas Aquinas, Calvin, Newton and Locke. It brings into focus the question of the basis or origin of positive law.

Though Quesnay, as an enlightenment economist, trusted in enlightened reason to show us the way to a legitimate socio-political structure, he finally sought refuge in a "theological" intellectualism — the divine intellect as the source of law. He was still far from the complete rationalism of Kant, who believed that law is imposed by reason itself, and one could say that he was seeking to avoid relativism by falling back on a divine absolute. However, human folly (especially that of the monarchs he still defended) did not open his eyes to the limitations of reason's ability to understand such a higher law. He was a child of the Enlightenment who believed the process of "en-

lightening" would solve the problems of humankind — rational knowledge of law would be part of his bequest to positivism.

Finally, Quesnay's unification of the two meanings of "natural law" provides a distinction between human moral life and physical processes as well as a double connection of human control in the exploitation of the physical and human dependence on the physical. This distinction becomes a parallel in Turgot, and the relationship of dependence is accentuated.

3. Turgot (1727-1781): the law of progress and natural necessity

Although they both subscribed to some basic principles of physiocracy, an atmosphere quite different from that of Quesnay's writings pervades the works of Turgot,[7] especially his later work, *Réflexions sur la formation et la distribution des richesses* (written in 1766). Yet it is precisely in this work that the influence of Quesnay (as well as that of Hume) shines through (Meek 1973: 17ff). I believe that Turgot stands much nearer to positivism than some interpreters would be ready to grant, probably because philosophical and literary interpreters tend to read his philosophy of history without the *Réflexions*. Nor is it readily noted that even in his early writings the idea of progress is formulated in such a way that a fixed process is presupposed, duplicating itself in various human beings and nations. Turgot links events causally in a history of progress, based upon the principle of competitiveness as an inevitable motor of progression. Progress is primarily the accumulation of knowledge — a progress according to a fixed (law-like) sequence of three phases, which moves from dominance by the subrational to rational control. Progress is, however, bound by physical necessity to the natural environment. Turgot initiates the idea of a mental superstructure dependent upon and determined by a material base.

7 Turgot studied theology, but did not enter the ministry. His early works on history formed part of his theological studies. He worked very successfully as a provincial administrator, and had considerable success in upgrading the agricultural economy of his province. He aligned himself with physiocratic economic theory. As a minister in the French cabinet his economic policies were opposed by the elite, and he lost his post.

3.1 Nature and history

Von Hayek (1952: 106ff) noticed that Turgot anticipated positivism in viewing the progress of the natural sciences as a gradual emancipation from the application of anthropomorphic concepts to natural phenomena in terms of three stages. But he did not believe Turgot to be guilty of a scientistic extension of the methods of natural science to social phenomena. Manuel (1962: 20ff) goes somewhat further. He argues that the status of the human order (which appeared to be ruled by accident or chaos, in contrast to the constancy of the physical order) was saved by Turgot and returned to its central position by accepting a rule of constancy for human history: "the extraordinary law of steady perfectibility".

It is my contention that in searching for inevitability in human history, Turgot was in effect extending something of the modern natural sciences approach to the human sciences (as did Descartes, Petty and Locke before him).[8] In *On universal history* (written early in the 1750s) Turgot (1973: 98) explicitly states that what applies to the sciences of "combination" and "observation" (mathematics, logic, physics, and metaphysics) may also be applied to the sciences of morals and politics. Turgot is referring here to his own (Lockean) insistence on sensation as the source of ideas, which are then combined into theses and hypotheses. And much later, in the *Réflexions*, he searches for a social bond in the material base (to use a term from Marx) of society. He may not have denied individual liberty but in terms of totality he was surely a determinist, like Rousseau, Adam Smith and Kant (1975b: 33), who viewed human collectivity along the lines of the model of the physical universe. One can see something of this parallel between the natural and the human sciences in the very words — from the *Philosophical review of the successive advances of the human mind* (1750) — by which the two orders are distinguished from each other:

> The phenomena of nature, governed as they are by constant laws, are confined within a circle of revolutions which are always the same. All things perish, and all things spring up again; and in these successive acts of generation through which plants and animals reproduce themselves time does no more than restore continually the counterpart of what it has caused to disappear.

8 For Descartes see *A Discourse on method* II; for Petty cf Chalk 1951: 342, and for Locke *An essay concerning human understanding*, IV.

> The succession of mankind, on the other hand, affords from age to age an ever-changing spectacle. Reason, the passions, and liberty, ceaselessly give rise to new events: all these ages are bound up with one another by a succession of causes and effects which link the present state of the world with all those that have preceded it. The arbitrary signs of speech and writing, by providing men with the means of securing the possession of their ideas and communicating them to others, have made of all the individual stores of knowledge a common treasure-house which one generation transmits to another, an inheritance which is always being enlarged by the discoveries of each age. Thus the human race, considered over the period since its origin, appears to the eye of a philosopher as one vast whole, which itself, like each individual, has its infancy and its advancement (Turgot 1973: 41).

Firstly, though it is certainly true that Turgot here signals a contrast between natural and human phenomena (in that the first is supposed to be cyclical while the second shows a relationship of linear progression), he is clearly in search of some order in the succession of human events, which he finds, by analogy with physical events, in causality. At the beginning of *On universal history* Turgot (1973: 63) provides another comparison of the physical versus the human. He states that we become conscious of reality from the inter-linking of our ideas, and from the order of the laws which all these ideas follow in their variations. Through the interrelations of various sensations one becomes aware of the existence of external objects, and a similar relationship in the succession of one's ideas reveals the past. But it is not only the relations among ideas which are subject to laws — Turgot moves in one breath, without clear distinction, from the relations of ideas to the relations among things. The latter, he says, are "by no means passive"; they all "act on one another according to their different laws and also according to their distances from one another" — it is a chain in which we know only a small number of links. Turgot's discourse tends in the direction of a causal understanding of human actions.

Secondly, apart from the foregoing common aspects of the two areas, there are also differences: the laws governing bodies constitute physics, which laws are "described, not recounted", since they are constant. Human beings (together with animals) present a very different spectacle in that they succeed one another in generations and they are distributed all over the earth (which brings about certain

differences). Human beings, "being endowed with a more developed reason and more liberty of action", have a wider variety of relationships among themselves and, having developed signs, can transmit acquired ideas into infinity. A continual combination of accumulated ideas with human passions constitutes human history, which (as mentioned above) has the structure of a living being, growing from infancy to maturity.

The common feature of the two areas is a succession of events subject to laws and distance (geography is often mentioned as important for an understanding of progress); the difference is that the physical remains constant while the animal is subject to growth and decay. But the overall pattern of the latter is still one of constant progress. In fact Turgot (1973: 64) states that the human race always remains the same during difficult times and always proceeds towards perfection. Kant would later try to solve the problem of inconsistency in progress — the phenomenon of growth and decay — by saying that during decline a new society is already being born, which this will have a higher zenith than the previous one. For Kant, like Turgot, progress is valid only for the human race as a whole, not for the particular case or period (cf Venter 1999a: 31ff).

3.2 The principles of progress: self-interest, passion, and accumulation

One of the causal principles at work in human progress is the principle of self-love, upon which politics, morality and even justice are based (Turgot 1973: 98) — a principle which uses evil to promote good, ending in an equilibrium (peace). This Enlightenment principle is at the basis of Adam Smith's and (a little later) Immanuel Kant's thought (Venter 1992: 192ff; 1999a: 30ff). Turgot (1973: 41) says that the human mind is moved by self-interest, ambition and vainglory, yet attains perfection. War is at the basis of development, and through revolutions and power shifts "everything gradually gets nearer and nearer to an equilibrium, and in the course of time takes a more settled and peaceful aspect". Ambition in time begins to limit its own ravages: "the evil which is inseparable from revolutions disappears: the good remains and humanity perfects itself" (Turgot 1973: 44). This one law of progress is exemplified in different parts

of the world at different times. Thus although one cannot make the past present again (as we can do with experiments in physics on the basis of "the consistency of nature with itself" (cf Turgot 1973: 98), we can still trace the pattern of progress and determine its principles.

Secondly, Turgot draws attention to the factors in humankind that are productive of innovation: reason, the passions, and liberty. Reason actually comes last, for it would have hindered progress had it come into action at an earlier stage (see below). Turgot favours the idea of structured linear progression in history.

Thirdly, he singles out the possibility of the succession and accumulation of knowledge as given in the convention of speech and writing, for human progress is primarily the progress of the mind in acquiring knowledge — the language of the Enlightenment also found in Quesnay. This being a cumulative affair, it cannot but follow a linear progression. Working from an almost sensationalist epistemology centred on the accumulation of ideas from sense and transferring these into words, Turgot distinguishes between the early hunters with a limited but vivid vocabulary, the shepherd with a more refined language, and the husbandman with his colder and coherent language. Meek (1973: 5) sees this theory of phases in the economic base, correlated with development in the cultural superstructure, as very influential in the eighteenth century. The idea of progress as primarily mental but dependent upon the physical did in fact prepare the way for more elaborate theories in the same vein in Condorcet and especially in Comte and Marx.

Fourthly, Turgot sees a parallel between the progress of the human race (which here forms an almost mystical unity), and that of the maturation of the human individual — an idea which we also find in Adam Smith, Lessing and (later) Auguste Comte. The suggestion is again that of a fixed linear progress through phases, and therefore implies a predictability for individual societies.

In fact, the causal linking of human history, in linear progression, focussing on mental progress, and viewing progress by analogy with the maturation of the individual, are all ideas developed later by various strands of positivism.

3.3 The three phases of intellectual progress

The idea of a cumulative progression of knowledge (in the physical sciences in particular) was in itself not totally new — limited versions can be found in Roger Bacon, Francis Bacon, Bernard Fontenelle, Descartes and Pascal. But Turgot included all aspects of human knowledge under it, although he had some doubts about moral knowledge (cf further Manuel 1962: 21-2; Morley 1892: 95-109). The anticipation of Comte's law of three phases in Turgot's *On universal history* was of considerable importance to the understanding of the later interpretations of law. In the context of the falsification of hypotheses and easy analogies, Turgot tells us that initially, before the coherence of physical events was known, it was natural to ascribe them to invisible intelligent agents; somewhat later philosophers recognised the absurdity of such explanations and replaced them with meaningless abstractions; the advent of mechanistic explanations finally replaced bad metaphysics.[9]

9 "Before men were conversant with the mutual interconnection of physical effects, nothing was more natural than to suppose that these were produced by intelligent beings, invisible and resembling ourselves [...] Everything that happened, without men having a hand in it, had its god, in respect of whom fear or expectation soon led to the establishment of a cult; and this cult was once again devised on the model of the respect which people might have for powerful men. For the gods were only more powerful men [...]

"When the philosophers had recognised the absurdity of these fables, without yet having acquired any real understanding of natural history, the idea struck them to explain the causes of phenomena by way of abstract expressions like essences or faculties: expressions which in fact explained nothing, and about which men reasoned as if they were beings, new gods substituted for the old ones. Following these analogies, faculties were proliferated in order to provide a cause for each effect. [...]

"It was only much later, through observation of the mechanical action which bodies have upon one another, that men derived from this mechanics other hypotheses which mathematics was able to develop and experiment to verify. That is why physics did not cease degenerating into bad metaphysics until a long period of progress in the arts and in chemistry had multiplied the combination of bodies, and until, with the development of closer communications between societies, geographical knowledge had become more extensive, facts had become more certain, and the practice of the arts had itself

Turgot clearly anticipates the central ideas of Comte's law of three phases — divinities as causes, followed by abstract metaphysical entities, followed by relations between things (understood here in a Cartesian way as mechanical relations). His perspective is much wider though — he includes the whole variety of mental activities (communications, geography, the arts, and the society of scientists) in the development; Comte focussed much more one-sidedly on the history of the scientific intellect.

The idea of three phases in the development of human mental capacity may not have been original in Turgot. Gay (1969: 109) finds an interesting anticipation of Turgot's stages in Roger Cotes' preface to the second edition of Newton's *Principia*. Cotes argues that there are natural philosophers — the Aristotelians — who have "attributed to the several species of things, specific and occult qualities, on which, in a manner unknown, they make the operations of the several bodies depend". Rejecting this, some other philosophers regard matter as homogeneous, and speculate on the simple foundations of the world: "hypotheses" which according to Cotes are no more than "ingenius romances". And finally there are philosophers who "profess experimental philosophy" (cf Newton 1974: 117ff). Turgot's discovery was in the air, says Gay.

If Gay is right that there is a connection between Cotes and Turgot, then it is a very weak one, and Gay has been very selective in his reading of Cotes. Cotes distinguishes three classes of natural philosophers, but he does not indicate any succession among them. The first group uses occult qualities situated in the natures of things, which according to Cotes provides no explanation, with no reference to anthropomorphic divinities. The second group is on the right track since they proceed from the simple to the compound, but they hypothesise "unknown figures and magnitudes [...] uncertain situations and motions of parts [...] and occult fluids" (Newton 1974: 117) — and then attempt to deduce consequences from these. This is again

been brought to the attention of the philosophers. Printing, literary and scientific journals, and the transactions of Academies increased the degree of certainty until today it is only the details which remain in doubt" (Turgot 1973: 102; cf also Gay 1969: 109).

not near enough to Turgot's second phase of supposing "faculties" or "essences" (Cote's first group shows more resemblance to Turgot's second phase). Turgot's third phase is one of a combination of hypothetical argument with experimental observation in the context of a wider intellectual maturity; Cotes' third group is supposed to reject hypotheses and to work from strictly observational principles. In fact, whereas the Newtonian tradition rejected the use of hypotheses as falsification procedures, Turgot believed that even wrong hypotheses (or whole systems) serve progress (an implication which is also implicit in Comte's law of three phases).[10]

Turgot's theory of the three stages was probably more a product of his Lockean theory of knowledge than of Cotes' three classes. He does not tire of repeating that all of humankind's knowledge is "contained within actual sensation" and consists in combinations of ideas compared with observation (Turgot 1973: 93, cf also 42).[11] The three phases actually indicate how humankind learned to make better use of its senses and reason — explaining the movement of physical bodies with the help of anthropomorphic analogies, then through abstract entities as causes, and finally in terms of the interrelations of the bodies themselves. But the science of history underwent similar development (cf Turgot 1973: 92ff).

Turgot also connects his theory of the development of science with phased development in other sectors of culture. In fact, the differences among cultures indicate the phase in which each is situated. Thus they present (in cross section) all the shades of barbarism and civilisation at one moment. In the present state of the world's developmental inequality ("all the gradations from barbarism to refine-

10 "From all this it may be concluded that men were bound to pass through a thousand errors before arriving at the truth. Hence that host of systems, each one less sound than the other, which nevertheless represent real progress, [...] systems [...] which give rise to research and are for this reason useful in their effects. Hypotheses are not harmful: all those that are false destroy themselves. [...] The first step is to find a system; the second is to become disgusted with it" (Turgot 1973: 101-2).

11 His epistemology in fact has a stronger empiricist leaning than that of Locke, for he also reduces self-knowledge to sensations of external objects (Turgot 1973: 63), whereas Locke allowed for ideas of reflection as a separate category.

ment"), we can "at a single glance" see the "records and remains of all steps taken by the human mind, a reflection of all the stages through which it had passed, and the history of all the ages" (Turgot 1973: 42; cf also Morley 1892: 102; Manuel 1962: 33-6). The belief in the superiority of European civilisation compared to the other cultures (including the Chinese) which had become known since the Renaissance was the basis for the method of a universal historiography — a retro-projection into the past primitive origins of all mankind, and an extrapolation into its future glory. A synchronic comparison of cultures was supposed to show the diachronic progress of humankind. It is noteworthy that some decades later Condorcet developed a similar theory of progress on the basis of Locke's epistemology. Kant (1975c), in an essay about the origins of humankind, rationalises exactly this method of retropolation into the past and extrapolation into the future in an effort to explain the progress of humankind. Turgot pioneered the idea of progress and its accompanying method.

3.4 From subrational to rational

Nature is an extension of providence — in Turgot God is reduced to a vague providence behind nature, and religion is included in the factors of progress. The inevitability of progress is linked to this. Turgot refers to both the passions ("nature") and reason as factors of innovation. Both have an essential role to play in the progress of humankind — the passions dominating the childhood phase, and reason the mature phase. More subtly than Rousseau, for example (cf Venter 1999: 21ff), yet still clearly, Turgot sees progress from the subrational to the rational. As in the sixteenth- and seventeenth-century economists and his contemporary Adam Smith, as well as in Kant somewhat later, it is self-love (in this case ambition) which is the natural driving force. In the background can still be heard Hobbes' belief in the naturalness of competition for power, honour and wealth (cf Venter 2000b). Thus, as Quesnay had already said, evil is part of the overall good, and as Lessing, Adam Smith, and Kant had it, history moves in phases from the domination of the subrational to that of reason (cf further Venter 1999a: 4ff).[12]

12 "Ambition gathered strength, politics lent it perspectives, and the progress of the mind enlarged them: hence a thousand different forms of government. The

Turgot incorporates the subrational into the history of progress. Passions, even evil ones which lead to domination and war, are part of the process which brings to fulfilment the plan of Providence for enlightenment and happiness, even though ambitious geniuses do not have these aims in mind or even know where they are headed (cf also Gay 1969: 111). The close association between nature (and Providence or God) and the subrational is also present in Turgot when he says, a few lines further on, "before laws had formed manners, these odious passions were still necessary for the defence of individuals and peoples"; they were "the leading strings with which nature and its Author guided the human race in its infancy" (Turgot 1973: 71). These words were echoed in the writings of the later Kant, who viewed humanity in its infancy as on the leading strings of nature working via war and competition, although Kant supposed the awakening of reason to occur in this early period of humankind (cf Kant

> first were necessarily the product of war, and thus implied government by one man alone. We need not believe that men ever voluntarily gave themselves one master; but they have often agreed in recognising one chief. And the ambitious themselves, in forming great nations, have contributed to the designs of Providence, to the progress of enlightenment, and thus to the increase in the happiness of the human race, with which they were not concerned at all. [...] Thus the passions have led to the multiplication of ideas, the extension of knowledge, and the perfection of the mind, in the absence of that reason whose day had not yet come and which would have been less powerful if its reign had arrived earlier.
>
> Reason, which is justice itself, would not have taken away from anyone what belonged to him, would have banished wars and usurpations for ever, and would have left men divided up into a host of nations separated from one another and speaking different languages. As a result the human race, limited in its ideas, incapable of that progress in all kinds of understanding, and in the sciences, arts, and government, which arises from the collective genius of different regions, would have remained forever in a state of mediocrity. Reason and justice, if they had been more attended to, would have immobilised everything [...] But what is never perfect ought never to be entirely immobilised. The passions, tumultuous and dangerous as they are, became a mainspring of action and consequently of progress; everything which draws men away from their present condition, and everything which puts varied scenes before their eyes, extends the scope of their ideas, enlightens them, stimulates them, and in the long run leads them to the good and the true, to which they are drawn by their natural bent" (Turgot 1973: 70).

1975b: 33ff; 1975c: 87ff). Turgot, however, does not mean to imply that God must take responsibility for contingent evil, but rather that Providence uses it to the advantage of mankind — his early theological training still surfaces here.

Though subrational, the passions play an important role in the innovation of ideas, the accumulation of knowledge and even the perfection of the mind itself. There are two kinds of passions, the "odious" ones which are violent, and the gentle ones which develop later and ameliorate the violent ones — but both kinds are "natural" and "necessary". Turgot for example ascribes to "instinct, that feeling for the good and the honourable which Providence has graven on all our hearts" the role of leading the philosophers of all ages during the infancy of reason to "the same fundamental principles of the science of behaviour" (Turgot 1973: 49-50). On the one hand nature (Providence) brings a law-like and *a priori* universal validity to moral principles (which strongly reminds one of the tradition of "natural law" as we find it in Locke or Quesnay), but on the other the principles are part of the subrational and thus Turgot borders on pragmatism in his acceptance of every process that works for progress regardless of its aims and motives.

As in Rousseau and Kant the rational situation is the later phase of the process (cf Venter 1999a: 21ff). Reason is a directly positive social faculty; it is justice itself and therefore peaceful. If it assumed dominance too early, it could not have established the tension-ridden intellectual world culture in which geniuses of one nation adopt the progress of another (even in cases where the less developed usurps the more progressive). Thus irrational "nature" plays a dominant role in progress.

3.5 The law of unequal progress

Turgot distinguished four areas of progress from which he derived the law of unequal progress (cf Turgot 1973: 48ff). The areas of technology, science, moral behaviour and artistic expression each follow a different development pattern. The resources of science are to be found everywhere that human beings are, and the "most exalted mental attainments are only and can only be a development or combination of the original ideas based on sensation", hence "the same

senses, the same organs, and the same spectacle of the universe have everywhere given men the same ideas, just as the same needs and inclinations have everywhere taught them the same arts" (Turgot 1973: 42). Artisans are directly concerned with the needs of life, and therefore technologies develop merely because time passes. Importantly, the arts are no more than "a succession of physical experiments" unveiling nature while utilising it (Turgot 1973: 56). War and domination do not therefore have a destructive effect on them. With the structure of the human being — the senses as the basis of his theoretical life and the needs as the spring of practical life — the structure of humankind's developmental history is given. Comte would take this further and use the practical needs to unify the practical and the theoretical in his version of the progress of the human mind.

Turgot (like Hume; cf Venter 1995: 136ff) had a hedonistic view of the fine arts — they are there for our pleasure and limited by the capacities of our sense organs, our imitation of nature and the development of our language; thus they have an upper limit. He believed that the arts had reached a summit in the Augustan age, of which later ages produced only imitations. He accepted a universal (natural) moral code consisting of Stoic virtues, utility, and Christian love, and respected the traditions of the church (even though he had left it). Moral progress was to be achieved through the reduction of morals to a science of observation, which would lead to a rational morality implying the end of war, cruelty, and crime, as well as a positive striving for the happiness of others (cf Manuel 1962: 3; 9-40; Gay 1969: 108ff).

Although in the earlier periods science had to learn from technology, Turgot believed these roles would be reversed in the course of progress. For Turgot, science meant illumination, implying enlightenment (truth), social change and even happiness in a rational context. The genius was the mediator of novelty in all areas. He could be suppressed by society; Turgot followed Locke in pleading for tolerance. Rather error than repetition or stagnation; mistakes might lead one temporarily astray, but would in the long run contribute to progress. Science had progressed so far that it would be impossible to stop the Enlightenment from spreading. Importantly, language had developed the most sophisticated form possible in the notational systems of mathematics, and other sciences were moving towards using

mathematics as their form of expression. Mathematics was considered to progress faster since the comparison of ideas among themselves is simpler than the comparison of ideas with observations (a notion adopted and adapted by Comte). Mathematical formulations would make any retrogression impossible — even moral knowledge would be protected by this (cf Morley 1892: 103; Manuel 1962: 29ff; 43). Turgot sustained the spirit of Locke and Descartes in the sense that he idealised mathematical deduction as the guarantee of truth in the human sciences, but he sensed the lingual side of the argumentation (which they did not). But in stressing a deductive quantitative approach, he implicitly strengthened the determinist side of his view of the human disciplines.

3.6 The social classes

Although Turgot himself was not a mathematician, his approach to matters of academic importance, such as his *Réflexions sur la formation et la distribution des richesses*, clearly shows the traits of an admirer of the quantitative procedures of empirical science. Von Hayek (1952: 106) believes that Turgot was not yet guilty of transferring the procedures of the natural sciences to the social sciences, but in the following discussion I shall try to show that Turgot constructed his view of society as a whole on the basis of the single principle of physical necessity.

Turgot argues that an equal distribution of land could never have existed, for trade (exchange) would then have been impossible. Since there are different types of soil and different needs, and since the raw produce of land needs preparation before it can be used, specialisation, trade and exchange came into being (Turgot 1922: 3-74). Like Quesnay and his fellow physiocrats, Turgot insists on the pre-eminence of agriculture. What agriculture produces beyond the wants of the farmer is supposed to be the only source of the salaries of the other members of society.[13]

13 "It must however be observed that the Husbandman, furnishing all with the most important and most considerable article of their consumption, (I mean their food and also the materials of every industry) has the advantage of a greater independence. His labour, in the sequence of the labours divided among the different members of the society, retains the same primacy, the same pre-emi-

Turgot supposes food to be the most basic stuff among all products of the land, and the land to produce the materials for all industries. Of course he could not have predicted the production of artificial materials, not derived from agriculture, on the massive scale which we find today. First, agriculture is awarded primacy among all kinds of labour by physical necessity. Secondly, the bond of society is based on the exchange of products of labour, which has its origin in the surplus value (produced by the husbandman) through which the products of the labour of the artisan are acquired. Turgot's idea of the social bond approaches that of Adam Smith, though the latter's view allowed for an exchange of "good offices" and was therefore less materialistic than Turgot's.

Thus Turgot by "necessity" distinguishes the "productive class" (husbandmen) from the "stipendiary class" (artisans and others). Whereas competitive bargaining compels the stipendiary class to work for wages just equal to the necessities of life, the husbandman is in a very different position. For nature does not bargain with him to be satisfied with the bare necessities of life. What nature gives is not in proportion to his wants or to a contractual valuation of his labour — it is the "physical result" of the fertility of the soil and the prudence with which he cultivates it (Turgot 1922:9), making it possible for him to produce a disposable income.[14]

nence, as the labour which provided his own food had among the different kinds of labour which, when he worked alone, he was obliged to devote to his different kinds of wants. We have here neither a primacy of honour nor of dignity; it is one of physical necessity (*necessité physique*). The Husbandman, we may say in general terms, can get on without the labour of the other workmen but no workmen can labour if the Husbandman does not enable him to live. In this circulation, which, by the reciprocal exchange of wants, renders men necessary to one another and forms the bond of the society, it is, then, the labour of the Husbandman which imparts the first impulse" (Turgot 1922: 7).

14 "Here then we have the whole of society divided, by a necessity founded on the nature of things (*par une necessité fondée sur la nature des choses*), into two classes, equally industrious. But one of these by its labour produces, or rather draws from the land, riches which are continually springing up afresh, and which supplies the whole society with its subsistence and with the materials for all its needs. The other, occupied in giving to materials thus produced the preparations and the forms which render them suitable for the use of men, sells its labour to the first class and receives in exchange its subsistence" (Turgot 1922: 10).

Turgot believed that having one's land cultivated by others, for economic reasons, was not a viable option before a public force and a law superior to the individual force had come into being. The only way to keep land, then, was to continue cultivating it. The surplus value produced by the land made it possible for some to buy the labour of others to cultivate their lands — and thus to separate the ownership of land from cultivation. Very soon this would also lead to inequality in the ownership of land, for larger families had more hands to cultivate; temperament (fears for the future) drove some to cultivate more than others; the unequal fertility of land caused different yields. This whole process changed land into a commodity to be bought and sold, and finally ensured the separation of ownership and cultivation (Turgot 1922: 12-4). This argument leads to the deduction of three classes: the two classes already mentioned (in civil society both consist of wage earners working only for subsistence), and the class of proprietors, called the "disposable" class, for they receive the surplus value of the productive class, the only revenue of the state, and they are available for public service, since they are free from the burden of wage labour (Turgot 1922:15). Later Turgot shows that one can also distinguish a capitalist class, which acquires its status particularly by means of savings, but whose members belong in practice to the three classes already mentioned.

My intention is not primarily to discuss Turgot's views of society in detail, but rather to show how he developed his arguments to arrive at his social view, and what this implies for the question of natural law. It is worthwhile to note the way in which Turgot summarised the relationship among the three classes, and the discourse he used to express this. He argued that the cultivator produces his own wages as well as the income of the proprietors and the wages of the artisans. The proprietor depends on the cultivator "through the necessity of the physical order", for the land produces nothing for him without the labour of the cultivator, whereas the latter is bound to the proprietor only by virtue of human conventions and civil law. These latter guarantee to the proprietor only the surplus value of the land, for he must allow for the subsistence of the cultivator. And then in one pregnant sentence Turgot seals the argument:

> The Cultivator, confined though he is to the recompense of his labour, thus preserves that natural and physical primacy which renders him the first mover of the whole machine of Society and which causes his own subsistence as well as the wealth of the Proprietor and the wages of all the other labourers to depend on his labour alone (Turgot 1922: 17).

3.7 Natural necessity

Turgot scarcely uses the expression "natural law". He rather plays with the notion of "natural and physical necessity" as opposed to "human conventions and civil law". In effect, however, he weaves the whole structure of society from the threads of the material base. It is true that he shows a liberal spirit, especially in his insistence on a totally free market (both nationally and internationally and in both commodities and in money). But such a spirit is not always free of a determinist view of society, as Kant's "leading strings of nature" clearly shows. One may perceive a dialectical tension here.

In conclusion: it is surely possible to sustain the view that Turgot, given his views on the inevitability of progress, his theory of the three phases of progress, his natural sciences approach to the human sciences, and his structuring of society on the basis of the physical necessity of the work of the farmer, anticipated the views of Comte. In this way he helped create an atmosphere of validity for arguments in the social sciences to be modelled after the style of physical science, taking their point of departure from physical reality. Turgot helped to pioneer a "physicalist" outlook in the social sciences.

4. Auguste Comte (1798-1857) — law and the religion of humanity

In Comte,[15] known as the father of Positivism, the idea of natural law comes to a certain completion. "Natural law" and "law" in fact become the same thing. His ideas were the outcome of a long develop-

15 Auguste Comte studied at the École Polytechnique, and taught mathematics for a living. He was for some time associated with the socialist Saint Simon. He wrote his major scientistic, positivist work, *Cours de philosophie positive*, between 1830 and 1842. His later love for Clotilde de Vaux focussed his attention on the importance of love in human life.

ment of which a few preparations have been outlined above. Quesnay had already unified the two meanings of natural law (rational principles of human behaviour and physical regularities) into one concept covering two types of natural law (the physical and the moral). And Turgot had explained human behaviour as subject to natural necessity, and given primacy to the material base in his understanding of this natural necessity. Condorcet also anticipated Comte in the belief that the material environment dominates human progress. Like his predecessors, Comte mentions Diderot and Hume, Fontenelle and Condorcet, De Maistre, Francis Bacon, Descartes, Roger Bacon, Thomas Aquinas, Dante and "the incomparable" Aristotle (Comte 1957: 5-7). Surprisingly he does not mention Turgot, who clearly anticipated his law of three phases. But neither does he mention Saint-Simon, with whom he co-operated for many years.

Knowing the limitations of a purely non-religious, intellectual, scientific approach to human problems the mature Comte goes in search of an object of love which can find a higher meaning for the selfish and those engaged in trivial scientific pursuits. These latter contribute to the fragmentation of life, and Comte requires of the object of love to return at least a subjective unity of the human person and of social life. He argues for the reintroduction of religion with humanity as its divine object of love. But positive faith takes us back directly to the laws governing both inner-human and exterior phenomena — it is in subjection to these laws that both freedom and the control of nature lie. Even intellectual progress (in three phases, as proposed by Turgot) is governed by an unavoidable static law, and these laws mirror the external universal order. The love for humanity directs us in disclosing the possibilities for human exploitation in this order — a hierarchy with the physical as its base and the moral at its summit, expressing on the one hand the dependence of man on the subrational world, and on the other the supreme good for which all control and exploitation take place. But in Comte's understanding of law, as well as his scientific methodology, the natural science approach dominates, and when his humanistic religion is rejected, an engineering objectification of the human being remains.

4.1 Transcendence in immanence: the religion of humanity

The problem of the coherence of subject and object and the variety of things in the world was not acute in the Middle Ages, for medieval thinkers thought of the world as a creation cohering through God's will and laws, the certain of knowledge as guaranteed by faith, illumination, and the creaturely rationality of humankind. Modern thinkers moved the basis of certainty into human consciousness, and had either to view the laws of creation as given to knowledge in an *a priori* sense (Descartes), or to assume that human reason autonomously imposes law onto the world, and that the coherence of the world is the product of reason (Kant, Hegel). As early as Quesnay, we find a strongly diminished role of the "supernatural" *vis-à-vis* the "natural"; in Turgot only a vague "providence". Comte explicitly rejects the "supernatural" in favour of a complete "naturalism" — he differed from Kant by absolutising law as the final master that we all have to obey. Comte then reinvents the "supernatural" as part of the "natural" by absolutising humanity into the "Great Being" in order to find a basis for morality, as well as at least a subjective coherence among the variety of laws (in this he agreed with Kant), and the dualism of the physical versus the moral in human life. His late work, *Catéchisme positiviste* (1852), provides a condensed explication of his mature thought. Our focus here will be on Comte's two absolutes, humanity and law, as they are presented in this work.

> In the name of the past and the future, the theoretical servants and the practical servants of HUMANITY have dignifiedly taken over the general direction of earthly affairs, in order to finally construe the true moral, intellectual, and material providence, while excluding irrevocably all the slaves of God, catholic, protestant, or deist, from political supremacy, as being both backwards and disturbers (Comte 1957: 1).[16]

This was the proclamation with which Comte concluded his *Cours philosophique sur l'histoire générale de l'Humanité* (1851). The ideas contained in the proclamation were given further shape in the second volume of the *Système de politique positive*, and are therefore a good indication of the formative aims of Comte's later work. The philosophy

16 This and the following translations from *Catéchisme positiviste* are all mine — JJV).

of humanity unveils itself here as a political "theology" which replaces the "supernatural" conception of God with the "natural" one of "humanity" in the context of a quasi-historical ontology of reality structured-for-progress, according to which the divine (humanity) works at its own perfection over time. Perfection in this case means an improved ability to follow the higher (more complex) laws without being jeopardised by the more dominant, lower (simpler) laws. Politically Comte was looking for a social unity in the form of sociocracy to replace the outdated aristocracy as well as "anarchic" democracy. Philosophically he was looking for the unification of human life in the context of a variety of laws and the dualism of soul and body — "knowing that which is, in order to foresee that which will be, with the aim of improving it" (Comte 1957: 70). The religion of Humanity had to fulfil all these roles.

To place humanity in the position of focus or destination of individual action was not exceptional; it was inherent in the historical ontology constructed by humanism at least from the days of Defoe, Lessing, Rousseau, and Kant. The human-centred teleology of nature is a product of the Enlightenment, explicated by Comte in its full religious implications. Comte anticipates Skinner and the technicists in the belief that humanity can take charge of its own perfection by means of the knowledge of natural law.

At the basis of Comte's idea of the religion of Humanity lies the problem that in terms of a naturalist approach, the human being is delivered over to its instincts and the need to provide the means of survival. These tendencies are egoist, and viewed from this perspective fellow human beings are creatures (not God's image as in the Judaeo-Christian tradition) reduced to simply enemies or competitors. The consequence of a Hobbesian natural condition, in which short-term interests take precedence over long-term interests, and personal good over that of others, looms large here.

Comte is very conscious of this problem, and allows his dialogue partner in the *Catéchisme positiviste* to state it in many different forms. His solution is a "transcendence" within immanence. Referring to the ancient situation in which religion encompassed both the physical (such as prescriptions for health) and the moral in an integrated unity, and the powerlessness of "modern" medicine to persuade

people scientifically to follow lifestyles which are healthy in the long run, he argues that "one needs to invoke an authority superior to every individuality [...] to impose really effective rules, [...] founded on a social appreciation which never allows for any indecision" (Comte 1957: 50). In other words, if society enforces the rules of a healthy lifestyle they will be followed. Comte realises, however, that if such an external supreme power is not loved by its subjects and therefore is not internalised in some way, it will not have authority. Our actions (practice) and our thoughts (and therefore also theory) are always directed by our affections (of which the sentiments are the highest), and these need to be co-ordinated by a dominant instinct. This is the first condition of the universal religion. Internally, therefore, the principle of love must be at work, but — and this is the second condition — externally, intellectual faith must point us to the real object of love (humanity).[17] Comte does not seem to trust Kant's belief that rational autonomy has credibility in itself.

The word "religion", well understood, expresses the realisation of these two conditions, for "it indicates the state of complete unity that distinguishes our existence, both personally and socially, when all its parts, as much moral as physical, converge habitually towards a common destination", consisting therefore in "regulating" the individual and "rallying" individuals as a collective (Comte 1957: 46). One could say that religion is here still understood in the sense of a *causa finalis* (final destination) as a unifying factor (reflecting Comte's association with the tradition of Aristotle and Aquinas). In its humanist orientation, however, it also works in the direction of the kind of collectivism which would later develop in the different strains of socialism. Outwardly, Comte's religion acts through positive faith — the

17 "But this interior condition of the unity would not be enough if the intelligence did not make us recognise on the outside, a superior power, to which our existence must always submit itself, while modifying it. It is with the aim of better submitting to this supreme empire, that our moral harmony, individual or collective, becomes especially indispensable. Reciprocally, this preponderance of the outside tends to regulate the inside, by favouring the ascendance of the most reconcilable instinct with such a necessity. Thus the two general conditions of religion are naturally connected, especially when the exterior order can become the object of the interior sentiment" (Comte 1957: 51-2).

faith of the mature intellect which has left behind the theological as well as the metaphysical search for causes and focuses directly on laws.[18] Positive faith has only one object, and that is to conceive the universal order which dominates human existence, aiming to determine the general relationship of humankind to that order. Every religious doctrine rests necessarily, Comte says, on an explanation of the relationship between the world and humankind. It does not matter what kind of explanation is followed, it necessarily comes down to an appreciation of this order which is independent of us, with the aim of better subjecting ourselves to it and modifying it (Comte 1957: 56).

The strong intellectualist strain of the Aristotelian tradition is diminished in Comte's positive religion. Positivism in the philosophical format presented until then suffered from two deficiencies of the scientific spirit: arrogance and dryness (Comte 1957: 62). But as positive religion it satisfies not only action and intelligence, but also the sentiment which "forms its principal domain and becomes the base of its unity" (Comte 1957: 10). The final synthetic conception is as favourable to the "heart" as to the "spirit" (Comte 1957: 62). Elsewhere Comte (1957: 63) says that the doctrine of the "immense and eternal being, Humanity" consecrates "the preponderance of the heart over the spirit as the unique base of our veritable unity". As long as positive science was focused in the material and even the vital, there was no object of love — its expansion into the area of the human sciences provides this object.

In this mature phase Comte also limits the scientism with which positivism is often associated (cf Von Hayek 1952: 53ff, 87ff; cf also Venter 1996b: 234ff). He allows "the degree of approximation [...] to be regulated by our practical needs, that measure the precision sui-

18 "The positive faith unveils directly the effective laws (*lois*) of the diverse observable phenomena, as much interior as exterior; that is to say, their constant relations of succession and of similitude, which allow us to foresee them [the phenomena] one after the other [...] In its theoretical conceptions it explains always how (*comment*) and never why (*pourquoi*). But when it indicates the means to direct our activity, it makes, on the other hand, the consideration of the aim to constantly prevail; since thus the practical effect emanates certainly from an intelligent will" (Comte 1957: 57).

table for our theoretical forecasts" (Comte 1957: 174), in the sense (anticipated by Descartes) of a "common exploitation of the human planet" (Comte 1957: 4), though a peaceful one. Like Kant and Marx, who both expected progress towards lasting peace in the final phase of history, Comte envisaged the overcoming of human conflict, but then through his universal religion. Whereas the preceding perspectives (the theological and the metaphysical) are "fictional", positive doctrine is "always characterised by a combination of reality with utility" (Comte 1957: 7). The rule is that systematic thinking is preceded by spontaneous action on the basis of affection (Comte 1957: 70-71). In fact the principle of love and altruism — "to live for the other" (Comte 1957: 54) — takes root as a gradual process of subjecting (not negating) the primary egoistic survival instincts by practising sociability. This conforms to the natural law that suppresses or develops our organs and functions in proportion to the measure in which we use or fail to use them (Comte 1957: 52-5). By concentrating one's actions outside the individual person in the Great Being, unity is found in personal life (the moral and the physical, the practical and the theoretical are brought into coherence), as well as in social life (where the other assumes primacy). This unity is expressed in:

> [...] the sacred formula of positivism: Love as a principle; Order as base; Progress as goal (Comte 1957: 63).

The "sacred formula" makes "order" into the basis of Positivism. This introduces the meaning of the network of terms used by Comte in connection with "order": "law", "natural law", "universal order" and even "fatality" and "hazard".

4.2 Law

In a context where the only essential object of positive faith is characterised as conceiving the universal, independent order which dominates human existence, by studying its "real laws" (in contrast to searching for its "fictional causes"), Comte (1957: 57) approaches a definition of "law":

> Positive faith reveals directly the effective laws (*lois*) of diverse observable phenomena, as much interior as exterior, that is to say, their constant relations of succession and similitude, which permit us to foresee them one after the other. It discards, as radically inaccessible

> and profoundly vain, every research about causes properly said, primary or final, of any events. In its theoretical conceptions, it explicates always how and never why.

The practical aims of theory are still clearly visible in this definition: the knowledge of laws is limited to how things happen, how events succeed or mirror one another, with the aim of forecasting (and control). Just as we cannot explain events by reference to causes, so also laws cannot be explained, for they are the condition of every reasonable explanation, which always consists in subsuming a particular event under a general law (Comte 1957: 58-9). All phenomena, also the interior ones (intelligence and sociability), are subject to such invariable laws (Comte 1957: 59). The invariability of the laws does not exclude their modifiability; the more complicated the phenomena are, the more modifiable the order is. Comte slips from "order" to "law" and back, without clearly distinguishing them, but equally, without actually identifying them: he assures us that even though the order is modifiable, the fundamental conditions of all phenomena (even the complex ones) are always unchangeable. Although secondary conditions are therefore changeable, such changes do not alter the "real laws", since they never become arbitrary. Total immobility, would however, be contrary to the notion of law itself, since law "characterises especially the constancy perceived in the midst of variety" (Comte 1957: 61).

4.3 Law, order, and freedom

Comte easily moves from the above description of "law" to "natural order" — the latter does not seem to constitute for him a specific kind of order. In fact he ascribes to Positivism the re-establishment of the "natural order" in the sense that it brings the physical and moral orders back to the unity which they initially had in ancient religious practice (Comte 1957: 49). This leaves us with an ambiguous position with regard to human action or praxis — we are both subjected to, and modifiers of law. Comte says that ancient humankind felt subjected to an absolute "fatality" since phenomena were conceived of as the products of arbitrary, superhuman wills. As the realisation that phenomena are subject to laws occurred first with regard to heavenly events, where human intervention is impossible, this fatalist attitude

was confirmed. But as knowledge of the real order developed, there was a realisation that this order is modifiable (Comte 1957: 59-60). Comte calls this a "modifiable fatality" which destines the human being to both "resignation" and "activity" (Comte 1957: 61). Exactly how this modification is supposed to occur remains unclear; Comte reiterates Kant's idea that the human subject imposes laws; moderates this to "modification", and includes suggestions of "engineering". Comtean naturalism, like that of eighteenth-century thinkers such as Kant, is inverted into a teleological, human-centred doctrine by the "deification" of humanity (cf also Venter 1999a: 26ff): order is our destination. Or it is chance for us, in proportion to our knowledge of it: if we do not know a particular law, then it does not exist for us, and we are therefore unable to act according to predictions in that area; such events are characterised as "hazard" (cf Comte 1957: 168-9).

It is order and its underlying laws which characterise human freedom. Comte denies that freedom is incompatible with "real order", saying that it "consists especially in following without obstacles the proper laws in the corresponding case", as when a body falls towards the centre of the earth (Comte 1957: 239). Since the human world is more complicated, freedom is to be achieved by special effort, for there are more chances of disturbance.[19]

Comte, like Locke (cf *Two treatises of government* II, vi, 7), associates law immediately with freedom. There is a difference, however. In Locke the "law of nature" gives (rational) direction, while in Comte freedom is identified with law in terms of a conception which tends to make the subrational prevail. Comte relinquishes the openness which his insight into the complexity of human phenomena allowed him, by seeing this only in terms of possible "perturbations", instead

19 "Thus the veritable liberty is found especially inherent and subordinated to the order, as much human as exterior. But to the measure that the phenomena are more complicated, they would become more susceptible of perturbation, and the normal state there supposes more efforts, as on the other hand it permits here a greater aptitude for systematic modifications. Our better liberty consists therefore in making, as much as possible, the good penchants prevail over the bad ones; it is also there that our empire is the most expanded, on condition that our intervention there always conforms to the fundamental laws of the universal order" (Comte 1957: 240).

of as space for the free play of positive creativity. Comte's idea of law was probably adopted from the sphere of "physical laws" (he viewed physics as the starting point of the positivising of knowledge), forgetting that "law" was originally a metaphor taken from the sphere of human freedom. It is significant that Comte no longer found it necessary to distinguish clearly between types of natural law as Quesnay did; law and natural law are synonymous for him.

4.4 Hierarchy and unity

It was noted above that the mature Comte aimed at unifying human life and society from a subjective perspective — a unification of the physical with the moral via the intellectual. In the eighteenth century (for example in Hume) the sentiments (the "organ" for everyday moral life) were considered as subrational, albeit reason's closest ally. Comte inverted this relationship and elevated the sentiments above the intellect by elevating the moral above the intellectual and maintaining the close association between the moral and the sentiments. The subordination and unification was obtained by virtue of the order of complexity among the laws, as well as the way in which the intellectual laws function in the hierarchy of complexity.

Comte's hierarchy rests upon the idea of a vast variety of phenomena, organised under a multiplicity of mutually irreducible laws — the unity of the hierarchy is therefore subjectively constructed. The first irreducible multiplicity is the dualism of the (subhuman) world and man. But each of the two represents in itself a variety of phenomena, which are subsumed under different and mutually irreducible kinds of law:

> [...] to explain [...] the systematic coherence of the whole positive dogma about such unity [...] you must from the start reject every absolute, external, in a word, objective, unity [...] Such a wish, compatible with the study of causes, becomes contradictory in relation to the study of laws, that is to say of the constant relations understood within the context of an immense diversity. These latter allow for only a purely relative unity, a human one, in a word: subjective one. In fact these laws are necessarily multiple, in accordance with the notorious impossibility of ever reducing one of the two general elements of all our real conceptions, the world and man, to the other. [...] Although the world supposes man to be known, it could exist without man [...] In the same way, humankind depends upon the world, but it [humankind] does not result from it [the world].

> All the efforts of materialists to annihilate the spontaneity of life by exaggerating the preponderance of inert environments over organised beings, has only succeeded in discrediting this research, just as vain as it is idle, from now on left to anti-scientific minds (Comte 1957: 167-8).

Comte accepts the world as it presents itself in its variety. This is what "scientific" means to him — reductionism would probably imply something like a causal explanation or spelling out the "why?", which he rejects. He ascribes some coherence to the variety due to their subsumption under particular kinds of law, but since the world of law is conceived of as also a variety (albeit a smaller one), he has no option but to accept the quasi-Kantian solution of unity as a construct. The metaphysical unity found in the simplicity of the transcendent God in Aristotle, Augustine and Aquinas is reconstructed by Comte in a subjective sense. But in his analysis of the different kinds of law, he did not consistently refrain from writing as if there is some kind of objective coherence, as our discussion of the combination of the law of classification with the law of filiation will show.

Comte's own summary (1957: 193) of the hierarchy is given under the title: "Theoretical hierarchy of human conceptions or synthetic table of the universal order, according to an encyclopaedic ladder in five or seven steps". The summary is encompassing, for Comte adds a subtitle: "Positive philosophy or systematic knowledge of humanity". The title and subtitle indicate what Comte intended the summary to present: the whole of his philosophy, but specifically (i) his view of the encyclopaedia of the sciences simultaneously with (ii) the way in which the total conceptual structure of knowledge is conceived, as well as (iii) a synthesis of the whole universal order. Comte thus slipped over from the constructivist (subjectivist) approach (ii) to an objectivist position (iii). It has been noted above that he viewed the universal order as independent.

In a "dogmatic" sense Comte divided the sciences into two groups: the study of the earth, or cosmology, and the study of man, or sociology. Cosmology is further divided into (i) abstract cosmology, or the fundamental study of universal existence, *ie* mathematics, and (ii) initially numerical, then geometrical, and finally mechanical cosmology, (physics, which is further subdivided into celestial phy-

sics, or astronomy, and terrestrial physics, consisting of general or proper physics and special physics or chemistry). Sociology is divided into (i) the preliminary or general study of the vital order, *ie* biology, and (ii) the direct study of the human order, which is subdivided into collective sociology (sociology proper) and individual sociology (morals). In all there are seven sciences: mathematics, astronomy, physics, chemistry, biology, sociology, and morals.

In an "historical" sense the first four are called "preliminary sciences" (those which historically first became positive but only found their meaning in terms of the human-centred teleology focused in the later sciences) or "natural philosophy"; they have as object the exterior order. The other three are historically characterised as "final sciences" ("final" here may be read as indicating both "later"and "goal") or "moral philosophy"; they have as object the human order. (It should be noted that in this exceptional case "natural" refers to the subhuman order).

The principles of construction of the hierarchy are non-reducibility, simplicity versus complexity, and the general versus the particular:

> Although every class of phenomena always has its proper laws, which suppose special inductions, these latter [inductions] would nearly never be able to become effective without the deductions furnished by the preceding knowledge of simpler laws. This subjective subordination results from the objective dependence of less general phenomena with reference to those that are more general. Thus the continuous order of our studies, always ascending from the world to man, is not only motivated according to the logical preparation that the simpler speculations allow; it rests also upon the scientific dependence of superior theories on inferior ones, according to the subordination of the respective phenomena (Comte 1957: 181).

Comte's condensed remarks here imply firstly that every science concerns a set of phenomena which has its own set of irreducible laws, and that knowledge of the higher sets of these laws presupposes two methodological approaches: (i) a set of deductions derived from knowledge of lower sets of laws, and (ii) a set of inductions derived from the study of the proper phenomena of a particular science. Knowledge of the higher laws is therefore methodologically subordinate to knowledge of the lower laws, in spite of their mutual irreducibility. Secondly, the position of a science in the hierarchy (and implicitly also of a class of phenomena) is determined by complexity

and generality: the simpler laws are more general (the simplest laws, those of mathematics, should therefore apply to all phenomena), and the more complex ones are more particular (thus the most complex laws, those of morals, apply only to a very particular set of phenomena). Again Comte (1957: 185) goes back to the objective sphere: the phenomena are connected with things, and "the phenomena are only more general in as far as they belong to a larger number of existences". In other words, the measure of extension of phenomena (and their laws) over things qualifies the things as of this or that kind. The dogma of humanity thus provides the transcending movement which gives meaning to the knowledge of the simpler phenomena and therefore limits them to the interest of human exploitation of the planet; on the other hand, the sciences of complexity historically presuppose that the sciences of simplicity be positive before the higher sciences can succeed.

4.5 The intellectual laws

Surprisingly, the study of the intellect and its laws, the mediating knowledge in the process of the theoretical unification of the superior sciences with the inferior (the moral with the physical) is not included in the summary. In the order of dependence the moral laws have their foundation in the intellectual ones (as sentiment ought to be founded on the intellect), and the intellectual laws have their foundation in the physical ones. These three types of law correspond with the Saint-Simonian distinction of physiological types of people: the cerebral type (scientists searching for positive laws), the sentimental type (artists and moralists working against egoism), and the mobile type (active people working and administering). But the mature Comte gave moral sentiment a more important role, correlating the three levels with gender differences instead of with types of people: the sentiments are more developed in women, therefore they did most for the development of morality; activity is more developed in men, thus they contributed most to a firm basis for the utilitarian functions, and the intellectual world is the proper field of the priesthood of the religion of humanity. Until the arrival of positivism, says Comte, the two genders followed empirical rules, with limited success. The physical order provided men with firm convictions, but without the coherent per-

spective which discloses the physical activity in terms of its moral destination, while the (feminine) moral order lacked the firm base of intellectual physics (physiology?), and amounted to no more than refined affection. But the proposed unity in terms of the positive dogma provides a different avenue:

> A sound theoretical culture ought therefore to surge from the physical order, by selecting from it enough active specialties. But as the necessary end of our real meditations resides in the moral order, the logical and scientific unity can only be established according to a sufficient union of these two extreme domains. But they can only be united through the intermediary domain, which is naturally united to each of them. It is for this reason that the construction of a true theoretical unity depends finally upon a sufficient elaboration of the laws proper to the understanding (Comte 1957: 169-70).

As with all laws, the intellectual laws are distinguished as static or dynamic "following their reference either to immovable dispositions or to essential variations of the corresponding object" and — importantly — "with reference to any domain whatsoever, the study of the static necessarily precedes the study of the dynamic" (Comte 1957: 171-2). The reason why the static has to precede the dynamic, as shall be demonstrated, is that the dynamic functions within the structural framework set by the static. In other words, Comte's idea of history is a structural one — his idea of progress is related to that of Turgot in the sense that it can only follow a fixed pattern in all communities. The fixed pattern of three phases which Comte inherited from Turgot is founded in a static law, and those who limit the discussion of law in Comte to the law of phases (eg Botha 1993: 45ff) are honouring him with too much dynamics. The intellect is bound to a necessary sequence in its development.

The static law of the understanding "consists [...] in the continuous subordination of our subjective constructions to our objective materials", which is "a simple application of the fundamental principle that subordinates man to world, everywhere" (Comte 1957: 172). Comte here refers to Aristotle's *adagium* that there is nothing in the intellect which has not first been in the senses, but hastens to add that Leibnitz and, in particular, Kant also drew attention to the converse: that the intellect is not passive and that every human conception therefore has a subjective and an objective side. Comte's po-

sitivism diminishes Kant's subjectivism by stressing the general law of the dependence of every organism upon its milieu — the external world serves as food, stimulator and regulator both for the body and for the higher spiritual functions. The external world rules the internal in terms of the complementary law that "in the normal state, the subjective images are always less lively and less precise than the objective impressions from which they emanate" (Comte 1957: 173). Two aspects of this law are important: (i) it has been seen above that from a utilitarian point of view we need not be one hundred percent precise, and (ii) the lack of precision leaves avenues open for theoretical speculation, but also for correction from the objective side till our heads become trustworthy mirrors of the outside world (Comte 1957: 173-4). The scope for theoretical speculation provides the basis from which the dynamic law can operate. The intellectual principle which makes evolution possible resides in the static law which "forces us to draw from ourselves the subjective connections of our objective impressions" (Comte 1957: 177). The Kantian side of Comte's epistemology shows itself in that the coherence of the impressions is supposed to be constructed subjectively. By means of the static law, however, Comte provides *a priori* for a structure of progress, called "the dynamic law".

As in Turgot, so in Comte, the progress of humankind is a mental one, which finds expression in the dynamic law of the intellect, known as the law of the three phases. This "consists in the necessary passage of every theoretical conception through three successive phases: the first, the theological or fictitious; the second, the metaphysical or abstract; the third, the positive or real" (Comte 1957: 176). The succession of phases is the product of the subjective construction of coherence among the impressions, governed by the static law. The true relations among things can only be comprehended after a long and gradual analysis, therefore the first hypotheses about coherence are purely spontaneous (and thus fictitious), explaining phenomena by means of superhuman wills — an excess of subjectivity brought about by the immature mental situation. This is a necessary phase, however, since progress requires an initiative such as this in order to modify the world according to our will, which is the motive for our intellectual efforts (Comte 1957: 177-8). And theological thinking

conforms very well to the single rule to which, for Comte, all sound logic is reducible: "to form always the simplest hypothesis compatible with the collection of attained information" (Comte 1957: 178). The second phase, the metaphysical, differs from the initial only in that it reduces the primitive divinities to simple entities — both phases provide causal explanations. But the consistency which the theological supernatural had in the social and mental spheres is lost by the metaphysical abstractions; this implies that metaphysics is no more than a pure "dissolvent" of theology — it is transitory (Comte 1957: 176-7). The last phase differs from the first two "by its characteristic substitution of the relative for the absolute, when the study of laws in the end replaces the search for causes" (Comte 1957: 176). Positivism, in its search for laws, sails between the Scylla of mysticism (searching for causes) and the Charybdis of empiricism (restricting itself to the facts) (Comte 1957: 174).

Comte explains the phenomenon that one and the same human intellect can, according to the questions which occupy it, simultaneously be theological, metaphysical and positive, by referring to the constant order which governs the flow of different conceptions, in terms of a complementary law: "as more general phenomena are necessarily simpler, the corresponding speculations must be easier and present [...] a more rapid ascent" (Comte 1957: 180). This means that theories in the fields of simpler phenomena become positive before those relating to more complex fields of study. Comte calls this the "law of classification", and it is especially subjective in the sense that it governs the order of studies, which properly moves from the world to man, providing both a logical preparation and a firm base for the superior theories, which depend on the inferior ones, just as the more complex phenomena depend on the simpler ones. But the law of classification directly implies an objective "signification" or law, with an especially static destination. This latter law does not govern the flow of subjective constructions, but rather applies to the fundamental order that dominates the collection of all events whatsoever, ruling "the general dependence of the diverse phenomena" (Comte 1957: 182). In this way Comte, in spite of his insistence that the unity is a relative and subjective one, still lapsed dialectically into the acceptance of an objective coherence of dependence, of events

of different kinds. In fact the name of this law, the "law of filiation", itself indicates coherence.

We can conclude, therefore, that even though Comte believed that coherence (or "unity", as he called it), is strictly subjective and relative, he did allow a kind of orderly coherence permit: in the law of filiation we find an objective coherence of phenomena — a coherence of dependence of the more complex on the simpler. The subjective coherence in the law of classification mirrors the objective coherence, and all the other laws presented by Comte indicate types of coherence. The dependence of superior phenomena upon inferior ones implies the dependence of humankind upon the world.

To draw the distinct lines of our discussion of Comte together: Comte tends, like Turgot, to allow physical necessity to prevail. The order of complexity, which parallels the order of dependence (the more complex being dependent on the simpler), implies also that the sciences of simpler phenomena take a methodological precedence over those of more complex phenomena, and this means that the methods of the natural sciences form the basis for those of the human sciences. But the prevalence of the physical and the methods of the natural sciences are tempered by two considerations: firstly that of the mutual irreducibility of the different kinds of law and the phenomena for which each set of laws is valid, and secondly that of the human order which is teleological and which is supposed to disclose meaning to the subhuman order. The idea of the practical or technical advantage of the human being — found already in Descartes, the capitalist economists, and the physiocrat Quesnay — is part of this teleological meaning.

The deification of humanity — a re-invention of the transcendent in the immanent, as is clear from the fact that Comte (1957: 178-9) rejected both pantheism and atheism, as well as the "supernatural" — is here based on a universal order conforming to irreducible laws which stabilise this order. In other words, Comte abolishes the law-giver God at the price of absolutising law itself. The "natural order" is the order, and freedom is nothing but conformity with law. "Law" is "law" — the debate on the meaning of "natural law" is actually irrelevant in discussing Comte. Or, stated differently: Comte's rejection

of the "supernatural" has left only "nature", but with an expanded meaning — all of reality is "nature" and subject to "natural law".

A distinct feature of Comte's conception is his definition of law as "the constant relations of succession and similitude" of "observable phenomena". This conception is a product of the positivist (anti-metaphysical) attitude of Comte: the relations are by virtue of the definition rather "statistical" and "Humean" — Comte apparently avoids analysing these relations in terms of categories such as those of Kant or the causal thinking of a strictly deterministic Einstein (cf Venter 1999b: 169ff). Comte's conception of law has the advantage, however, of offering the scope to include different kinds of law — *ie* to discuss even non-causal universal relationships in terms of varieties of law.

5. Conclusion

In modern times (following medieval suggestions), the metaphor of "law" in the sense of a cosmic order was specifically associated with rationality as the natural faculty of logical understanding. This was the case with the older meaning of natural law as the norm for human behaviour, as well as the later Cartesian view of natural law as an axiom for the understanding of mechanical nature. Whereas in the Middle Ages natural law served as a rationalisation for state intervention in all kinds of civil life (such as economic life), in modern times it became a rationalisation of the freedom of the individual to pursue self-interest, while intervention was seen as interference with the divinely established cosmic order (cf Willey 1962: 16-7). Thus two meanings of the metaphorical use of "natural law" emerged. Somewhat oversimplified, they can be distinguished as (i) the Cartesian: the inevitable regularities of the mechanical order, and (ii) the Lockean: the rational norm for living a life of freedom and respect for the rights of others. Ironically, in the tradition of humanism, especially positivism, the early modern association of freedom with "natural law" was progressively eroded until, in Comte, the world as environment became completely dominant, and those who did not follow Comte's suggestion of a religion of humanity, finally denied all human initiative (for example behaviourism and orthodox Marxism).

Will man live by bread alone? This indeed is what the physiocrats suggested. Quesnay focused on the two meanings, distinguishing natural laws as either physical or moral. Physical laws were regulated courses of physical events which are evidently the most advantageous to humankind, while moral laws were norms conforming to those physical laws. With a formulation like this, Quesnay introduced a one-sided relation of dependency on (subhuman) nature — morality being associated with the physically advantageous. But he also introduced a relationship of enmity: humankind is interested in nature insofar as it is advantageous for itself — it does not matter that its advantages may conflict with the interests of other sectors of creation. Quesnay plays a dialectical game between two extremes: on the one hand the normative freedom (rights) of humankind, and on the other the physical basis — but reduced to the advantageous (probably understood as that which promotes agriculture). Ironically one can still interpret "advantageous" in various ways — for all his accentuation of rights and free market principles, Quesnay remained near Bodin in his promotion of princely government. Positively Quesnay saw that within the cosmic order there are limitations to what human beings can aspire to — thus he criticises the bad use of freedom. But on the negative side he understands natural (physical) law only in terms of human self-centredness. Quesnay still refers to a higher authority behind natural law — a divine lawgiver. But he does not seem to have the same sense of divine presence which one finds associated for instance with Newton's idea of law (cf Van der Hoeven 1979: 85-90). His view of the world is centred in humankind, but at the same time even his (self-centred) view of morality has a physicalist strain to it. In time the two extremes would be pulled further apart: humanity itself becomes a divinity which either creates the order as an end in itself (Kant, Sartre), or serves as the final cause of nature (Comte). Or the emphasis could fall on bread production (Marx) and the physical conditions for its production — humankind as the product of the natural environment (Turgot, Watson and Skinner).

Drawing a clear distinction between the human and the natural spheres did not prevent Turgot from one-sidedly introducing the analogy of a causal relationship into the study of human history. The influence of the mechanism of self-interest, working through the pas-

sions (by analogy with growth into maturity) in the direction of a peaceful equilibrium, emerges very clearly in Turgot's early works. This approach, which had its precursor in Hobbes's "war of all against all" and the mercantilist view of the inevitable natural law of the price mechanism, is determinist in the sense that human competitive freedom (at least in aggregate) takes the human being with it like a dog on a leash. Thus human history follows a pattern regulated by laws, of which the law of the three phases of intellectual progress became the most influential. Human social relationships are established by the mode of bread production, by physical necessity, to be studied according to the quantitative methods of natural science. Turgot believed in a superstructure of necessary mental progress, based finally upon the foundations of production according to patterns of physical necessity, and thus became the precursor of Comte and Marx. In Turgot, humankind is progressively "naturalised" and the divine lawgiver disappears into a vague "providence". But he did still allow for an individual structure of human history on the basis of the creative passions and rational freedom, as humankind matures. However, as the sense of normative responsibility towards a higher authority declines, evils (such as greed, selfishness, and the ambition to control others), become simply part of the mechanism of progress.

Comte summarised his own mature philosophy in one sentence: "Love as a principle; Order as base; Progress as goal". Although indicated as "goal", progress is not a normative ideal towards which we may or may not strive: it is the inevitable development of the intellect regulated by the static law, which enforces the order of succession expressed in the dynamic law of three phases. The intellect has no free initiative in its development. Thus the system of Comte is one of law and order, expanded into the human field — he undeniably approached the human sciences after the pattern of the (physical) natural sciences. Comte, however, realised what Skinner may have forgotten: that a life lived under the inevitability of natural law may not be a life worth living — that it is love, rather, which makes life meaningful. Comte was also concerned about the self-centredness of the passions and would not as easily accept that such passions would necessarily contribute to progress. Thus he insists on the nonreducibility of the human to the subhuman, and on the disclosing

function of the love for the divine — a divine which he had to invent (in the form of humanity).

In the mature Comte modern humanism finds full expression: humankind matures by relinquishing the divine and thus finds itself completely as part of nature and its laws; but since life has no meaning outside the principle of love, Comte is obliged to introduce a transcendent into the immanent in the form of humanity as the divine object of love. Still believing (like Quesnay) that knowledge of the laws is intended for exploitation and control, Comte is afraid of the consequences of this for humankind (given its basis in selfish passions), but believes that the expansion of a law approach to the human sciences reveals a divinity which can serve (in the absence of a cosmic creator and lawgiver) as a "final cause": humanity itself. He then still has to put his trust in the law-abiding behaviour of the best instincts (those that function altruistically), and elevate the moral sentiments to the highest function in man. In the mature Comte, rationality begins to lose its standing as the midway between subjectivism (madness and mysticism) and objectivism (idiocy and empiricism). A valuable aspect to Comte's thinking is his defence of the non-reducibility of the human functions (the moral, social and intellectual) to the physical aspects, and the potential for cultural disclosure of the various law-spheres through love.

In modernity (Kant, for example) rationality had a double function: on the one hand it is the product of nature and the goal of nature's historical movement; on the other it is a goal in itself, and elevated above history, yet guiding history in its progress. The dethroning of rationality, which started very subtly in the mature Comte, is ironically also the dethroning of human dignity (for human dignity historically meant nothing more than the possession of rationality; cf Venter 2000a) and an ironical "guilt by association" in the human subject itself. The consequences of this we can find in Skinner's thinking. And in irrationalist pragmatism Comte's practical and teleological approach to natural law is taken to the extreme of the end justifying the means. But the collapse of the rational subject of progressive history is also to be seen in other, reactionary, forms of present-day thinking, such as Foucault's replacement of origins-investigation (the state of nature) with an endless genealogy of fact-

ual power relationships (Foucault 1984: 76ff), apparently without being able to take a normative stance in relation to the positivist "narrative of mastery" (cf Owens 1987: 57).

This at least clears the agenda for a new look at concepts such as "nature", "rationality", "order", "law", "norm", "subjectivity" and "freedom". The attempts of Dilthey and Husserl to promote special methods for the human sciences and the growth of qualitative research did not prevent positivism, pragmatism, and technicism from exerting a strong grip on the study of human beings. Later positivism did not accept Comte's reintroduction of religion and dualism: in scientism's (and the accompanying technicism's) view of humankind nothing especially "human" and untouchable remains: questions of normativity, subjectivity, and human dignity are marginalised in a reductionist, engineering approach to the study of humankind. This kind of study is not limited to proposals in journals and books; science now changes its object of study with the intention of remaking it.

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