This volume provides a valuable contribution to our knowledge of eighteenth- and nineteenth-century intellectual life inside and outside Germany.

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This elegant collection of essays ranges across eighteenth and nineteenth-century thought, covering philosophy, science, literature and religion in the 'Age of Goethe.' A recognised authority in the field, Nisbet grapples with the major voices of the Enlightenment and gives pride of place to the figures of Lessing, Herder, Goethe and Schiller.

The book ranges widely in its compass of thought and intellectual discourse, dealing incisively with themes including the philosophical implications of literature and the relationship between religion, science and politics. The result is an accomplished reflection on German thought, but also on its rebirth, as Nisbet argues for the relevance of these Enlightenment thinkers for the readers of today.

The first half of this collection focuses predominantly on eighteenth-century thought, where names like Lessing, Goethe and Herder, but also Locke and Voltaire, feature. The second has a wider chronological scope, discussing authors such as Winckelmann and Schiller, while branching out from discussions of religion, philosophy and literature to explore the sciences. Issues of biology, early environmentalism, and natural history also form part of this volume. The collection concludes with an examination of changing attitudes towards art in the aftermath of the 'Age of Goethe.'

The essays in this volume are brought together in this collection to present Nisbet's widely-acclaimed perspectives on this fascinating period of German thought. It will be of interest to scholars and students of the intellectual life of Europe during the Enlightenment, while its engaging and lucid style will also appeal to the general reader.
9. Natural History and Human History in Goethe, Herder, and Kant

The relationship between natural history and human history has played a decisive part in the rise of modern science and the modern historical consciousness. On the one hand, the application of historical thought to nature—i.e. its ‘temporalisation’—towards the end of the eighteenth century led to a radical reappraisal of nature as a whole. It was then no longer seen as a timeless hierarchy of unchanging forms, but as a developmental process in which first the physical, and subsequently the biological world were understood as the product of a natural evolution from simple to ever more complex forms. On the other hand, the tendency to view human history increasingly as part of nature and hence as an object of scientific enquiry led to novel attempts to discover historical laws and thereby to predict, or even influence, the future course of history. A central figure in these developments was Goethe; and no less important were his contemporaries Herder and Kant, whose thoughts on nature and history influenced Goethe’s thinking (although they also contradicted it in significant respects). A comparison of their views on nature and history may not only lead to a better understanding of Goethe’s own views, but also provide a greater insight into one of the

most important developments in the scientific and historical thought of the modern era.

All three thinkers were influenced in different ways by the growing tendency of their times to interpret nature as a historical, evolutionary process, and they themselves contributed to it. This essay will first consider their views on the history of the earth and its living organisms, before comparing the theoretical premises of the views in question. Secondly, their views on human history will be examined, and their thoughts on the relationship between nature and history will in turn be compared. The development of their ideas on these topics will be discussed in sequence, from Kant to Herder and finally to Goethe.

Natural History: Empirical Aspects

Theories of nature as a chronological process first appeared in the context of the physical sciences, and particularly that of astronomy. The belief that the physical world, and indeed nature as a whole, has developed over the course of time in a causal process is not, of course, a modern invention: it was already formulated by Democritus, Epicurus, and other atomists of antiquity. It found its most complete expression shortly before the Christian era in Lucretius’s didactic poem De rerum natura. But not until the scientific revolution of the seventeenth century did this doctrine receive a scientific foundation, for example in the work of Descartes and Leibniz, and not least in Kant’s epoch-making treatise of 1755, the Universal Natural History and Theory of the Heavens. The preface to this work clearly shows that Kant found himself in some embarrassment over the obvious affinity between his own cosmogony and that of the ancient atomists, because it was well known that the views of the latter were in contradiction to the doctrines of the church; he is therefore at pains to stress the compatibility of his own view concerning the mechanistic theory of the earth’s origin with the doctrine of divine creation.4 With reference to Newton’s mechanistic theory of gravitation, he explains the development of the solar system and the universe at large out of an original chaos of scattered material to its present state,

in which new galaxies, suns and planets continue to be created through the interaction of gravitational and centrifugal forces.

As soon as it was realised that the physical world as a whole had arisen through natural causes, there were grounds for concluding that its individual components might have arisen in the same way. The main reason why only a few eighteenth-century scientists managed to take this step was that the generally recognised length of the earth’s history (itself based on Biblical chronology) was much too short to accommodate even the most cautious estimates of the time needed for so numerous and complex organisms as those already present to evolve through natural causes. Besides, there were numerous indications that these organisms had not undergone any substantial alterations during the last three or four millennia (that is, around half of the earth’s supposed age of some six thousand years). There was accordingly a pressing need to look more closely at earth history in order to answer the question as to how the development of the earth itself could have taken place in so short a time. It naturally soon became clear that an incomparably greater length of time had to be postulated. One of the first works to draft a new chronology was Buffon’s *Époques de la nature* of 1778. Admittedly, the length of Buffon’s geological epochs was again unbelievably short by present-day standards, although he reckoned with tens of thousands instead of just thousands of years. But his work did at least provide an incentive for other scientists to view earth history as a long and complex process.⁵

As far as the universe itself was concerned, Kant was quite prepared to contemplate a really long period of development. He writes, for example, in his *Universal Natural History*: ‘Perhaps a whole series of millions of years and centuries elapsed before the sphere of organised nature in which we find ourselves attained its present stage of perfection; and perhaps an equally long period will elapse until nature takes as great a further a step out of chaos.’⁶

Kant’s early essay *The Question of whether the Earth is Growing Old Considered in Terms of Physics* (1754) treats earth history, albeit only sketchily, as a very long process.⁷ He further develops this draft with reference to Buffon and other earlier theorists in various subsequent

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⁶ Kant, WW I, 334.
writings, for example his *Physical Geography*\(^8\) and the essay *On the Volcanoes on the Moon*.\(^9\) And although his geological theories, given the limitations of contemporary knowledge, are highly speculative, he constantly strives to base them on natural causes and on natural laws that retain their validity today. He invokes, for example, earthquakes, subsidence, volcanoes, etc. in order to explain the formation of the earth’s surface over long periods of time. (The Lisbon earthquake of 1755 had made a deep impression on him.) But the important role which he, like Buffon and other predecessors, ascribes to the sea and its supposed coverage of the earth in early times already looks forward to the neptunistic theories which gained wide acceptance in Germany towards the end of the eighteenth century.

It is therefore not surprising that, in view of the pronounced historical tendency of Kant’s vision of nature, he even considers the possibility that all living organisms may be linked by descent from common ancestors. In a well known passage in his *Critique of Judgement* (1790), he observes that the anatomical similarity between many animal species might suggest such a relationship; but he adds ‘A hypothesis of this kind might be described as an adventure of reason, and there can be few natural scientists, including the most acute among them, whose minds it has not on occasion crossed.’\(^{10}\)

There is already a reference in Kant’s review of Herder’s *Ideas on the Philosophy of History* to such hypotheses, but Kant considers them ‘so monstrous [...] that reason shies away from them’,\(^{11}\) and in another work from that same decade he describes the constancy of natural species as a ‘law of nature’.\(^{12}\) But his resistance to the theory of evolution had nothing to do with religion; like many other Enlightenment thinkers, he simply found the empirical evidence so inadequate and the necessary timescale so long that the theories in question seemed ultimately incredible or at best unproven. At any rate, he did not yet feel able, on the basis of such daring hypotheses, to contemplate that ‘monstrous’ revision of the

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8 First as a lecture series between 1756 and 1796, then as a book in 1802; cf. AA XIX, 153–436 (esp. pp. 206 and 296–305).
9 1785; AA VIII, 67–76.
10 WW X, 375.
11 WW XII, 792.
12 WW IX, 145.
traditional view of nature which would result from the recognition of an evolutionary relationship between the animals and man.\textsuperscript{13}

Herder’s views on the history of nature and the origin of species show many similarities with those of Kant. He had attended Kant’s lectures on physical geography in Königsberg and was also familiar with his scientific writings. Since I have dealt in detail with Herder’s scientific writings elsewhere,\textsuperscript{14} I shall confine myself here to a brief outline.

Herder’s \textit{Ideas on the Philosophy of History} is one of the best examples of that eighteenth-century tendency, already mentioned above, to establish a connection between nature and history. For he envisages the history of the earth and its living creatures as a continuous process of which human history is a natural sequel. In other words, even the structure of his work presupposes that nature has its own history, and that human history is a part of nature.

Herder was very well read in the scientific literature of his time, and his cosmological reflections in the \textit{Ideas} are many-sided and eclectic.\textsuperscript{15} Even more than Kant, who, like Buffon, significantly influenced the initial chapters of the \textit{Ideas}, Herder was attracted to drastic theories of earth history, and speculates at length on geological upheavals and convulsions, for example a shift of the earth’s axis, in order to explain the earliest development of the earth. Some of the most extreme reflections of this kind were deleted or omitted (probably on the advice of Goethe, who collaborated closely with Herder during the composition of the first parts of the \textit{Ideas}).\textsuperscript{16} The published version of the \textit{Ideas} stresses the influence of the sea, out of which the earth’s earliest mountains crystallised; and like Goethe, Herder identified himself increasingly with the neptunism of Abraham Gottlob Werner in his later years.

But much more important than Herder’s individual theories is the fact that his conception of nature is fundamentally historical. It is also significant that, despite his tenure of a senior office in the Lutheran church, he takes the view that the earth has developed by purely

\begin{itemize}
\item \textsuperscript{13} On other evolutionary theories of the late eighteenth century see Engelhardt, \textit{Historisches Bewusstsein}, pp. 82–89.
\item \textsuperscript{14} See H. B. Nisbet, \textit{Herder and the Philosophy and History of Science} (Cambridge: MHRA, 1970).
\item \textsuperscript{15} Cf. ibid., pp. 167–80.
\end{itemize}
natural causes from its primitive elements: he explicitly states ‘that [...] creation [...] animates itself through organic forces implanted within these elements’. Such statements as this, along with the then widely held view that certain simple forms of life have arisen spontaneously and that new varieties of plants and animals can be produced by climatic influences, led various Herder scholars, particularly in the later nineteenth century, to present Herder as a precursor of Darwin. This claim has long since been refuted: for example, Herder explicitly denies in the *Ideas* that man is genetically linked to the apes and that any species can depart from its original genetic character. Nonetheless, he is often involuntarily led in the direction of the theory of evolution, as Kant rightly noticed. His often expressed belief that nature is animated by dynamic, monad-like forces which work their way upwards through the hierarchy of beings from simple to ever higher forms does indeed look forward, on an ideal level, towards that evolutionism which was later confirmed empirically by the palaeontological and genetic discoveries of the nineteenth century. As Arthur O. Lovejoy demonstrated, such hypotheses of idealistic genetics were a necessary stage in that temporalisation of the so-called ‘chain of being’ which prepared the way for the later, empirically grounded theory of a real evolution of species.

Goethe’s theories of earth history have many common features with those of Kant and Herder—features which largely go back to the time of his collaboration with Herder in the early 1780s. But in contrast to those of Kant and Herder, Goethe’s ideas are marked by a reluctance to speculate on the earliest phases of earth history. He refuses to go further back in history than the evidence of the earth’s present surface and in particular of the oldest granite mountains permit, and declares: ‘My spirit has no wings to soar back to those first beginnings. I stand firmly on the granite.

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17 SW XIII, 422.
20 SW XIII, 256f. and 415.
21 WW XII, 792.
22 SW XIII, 167 and 177–81.
and ask it [...] how the mass from which it arose was constituted’. This aversion is doubtless connected with his dislike of theories which seek to explain the origin of the earth by violent forces, and he also declares that ‘the dynamic’ of slow, quasi-organic development seems more important to him than ‘the atomistic and mechanical’ which is active in the dissolution and deposition of elements that are already present. For similar reasons, he was particularly drawn to neptunism, because it regarded the slowly acting effect of water on the earth’s surface as more fundamental than the spectacular but ultimately insignificant outbursts of volcanoes and earthquakes. In his later years, he is equally convinced that many geological events are initiated by imperceptible chemical processes. In all these cases, he is much more strongly interested in those phenomena which are still active in the present than in completely different phenomena which were allegedly active in a hypothetical primeval era. This scepticism towards hypotheses imposes limitations on Goethe’s historical understanding of nature, and his reflections on earth history are consequently markedly different from those of Kant and Herder. Since he considers only the more recent, empirically evident phases in the earth’s history as a developmental process in time, his view of nature can be described only in a qualified sense as historical.

Goethe’s views on the origin and development of living organisms are subject to similar qualifications. Here again, he distrusts abstract speculation and confines his attention to existing phenomena. Like Herder, he emphasises the effects of climate and environment on living organisms, and adds that ‘the animal is shaped by circumstances to circumstances’ and ‘the genus [...] can change to the species, the species to the variety, and this in turn can change again in infinite ways as a result of other conditions’. But the changes he has in mind—for example, the development of the horse or ox from antiquity to the

26 LA I. Abt., I, 378 (1811).
27 Cf. LA I. Abt., I, 95ff. (1785).
29 LA I. Abt., IX, 126 (1795).
present—are relatively superficial, and just like Herder, he doubts whether there is a genetic relationship between man and the apes. He writes, for example, ‘one cannot (or scarcely can) say that we are related to the apes through the Moors’. The qualification ‘or scarcely can’ is characteristic of his scientific thought: where the hitherto available empirical evidence does not permit an unambiguous answer, he simply leaves the question open (even though in this particular case, he was fully familiar with the anatomical relationship between man and the animals, as his essay on the intermaxillary bone in man demonstrates).

When he reflects, in a later essay, on the origin of the giant sloth, he adds the following qualification to his provisional observations: ‘May we be permitted some poetic expression, since prose in general may not be adequate in this instance.’ And although in 1823 he publishes a work by the botanist Ernst Heinrich Friedrich Meyer in which the latter declares: ‘It is impossible for one species to arise out of another’, Goethe neither affirms nor denies this proposition; here again, the question must remain open. As far as evolution is concerned, Goethe’s thinking is therefore akin to that of Kant and Herder: he is in principle prepared to understand the development of life and living organisms as a historical process, but the empirical evidence for a fully fledged theory of evolution still strikes him as inadequate.

We may therefore conclude that Kant, Herder, and Goethe were equally convinced of the historicity of the earth and nature as a whole—a natural history governed by natural laws. All three are in this respect true representatives of the European Enlightenment, whose basic convictions included the rule of natural law in all spheres of reality. But the most pronounced difference between their positions—and hence also the originality of Goethe’s concept of nature—becomes really apparent only when we consider their methodological premises and their understanding of those processes and mechanisms through which nature develops over time and thereby acquires a historical dimension.

A comparative account of the methods and principles which underlie the views of these three thinkers on scientific modes of explanation, and

31 LA I. Abt., IX, 254–60 (1822)
32 LA II. Abt., IXA, 201.
34 LA I. Abt., IX, 247 (1821).
35 LA I. Abt., IX, 300 (1823).
on causation and change in nature, will therefore conclude the first part of this enquiry.

Theoretical Aspects: Kant

In comparison with those of Herder and Goethe, Kant’s theoretical pronouncements on nature and natural history are much more differentiated, thorough, and systematic. Kant was an established philosopher who had addressed scientific themes in whole or in part in his earliest writings as well as in several of his major works. His theory of science was from the start associated with Newtonian physics, and it owed many of its insights to Kant’s intimate knowledge of contemporary physical theories, including their mathematical and technically most demanding aspects. Neither Herder’s nor Goethe’s knowledge of mathematical physics and its philosophical implications bears comparison with that of Kant.

This difference had a profound influence on the ways in which the three thinkers sought to understand and explain natural processes. For Kant, mathematical physics remained the supreme model of scientific explanation. It is even a primary support of his critical idealism, for the authority of Newtonian mechanics and its laws of motion stands for him on a higher intellectual level than that of merely empirical rules. He notes, for example, in the Critique of Pure Reason, that such laws are *a priori* necessary, whereas the necessity of principles of empirical observation is only indirect and dependent on contingent circumstances. In the *Metaphysical Foundations of Science* he declares ‘that every particular theory of nature contains only as much genuine science as mathematics is present in it.’ Thus by this definition, only mathematical physics can count as genuine science; and although the theory of gravitation, for example, is partly based on empirical observations, it can count as scientifically sound only in so far as it is based on a mathematical formula in keeping with the inverse square law. Even chemistry, not

37 Cf. WW III, 201–03; also Friedman, ‘Causal Laws’, pp. 165 and 174.
38 WW IX, 14.
39 WW II, 574f.
yet subject to mathematical treatment in Kant’s time, is in his opinion ‘no more than a systematic art, or experimental doctrine, but never a genuine science’.\textsuperscript{40}

Kant’s aim in his own writings on the empirical study of nature is always that of causal explanation in accordance with recognised laws of nature. In an essay of 1785 on earth history, for example, he condemns any appeal to supernatural agencies and says ‘in all natural epochs, since no one of these can be defined in a world of the senses as absolutely the first, we are therefore not exempt from the obligation to search as far as possible among universal causes and to follow its chain, as long as the links hang together, in accordance with already established laws’.\textsuperscript{41}

Here, the venerable image of the chain, in use since antiquity as a metaphor for the hierarchy of beings in space, is unambiguously temporalised: Kant’s view of nature is fundamentally historical. In another work from the same decade (\textit{On the Use of Teleological Principles in Philosophy}), he likewise notes that the term ‘natural history’ is misleading, because natural history has hitherto dealt almost exclusively with the systematic description of presently existing natural forms; in its place, he outlines as follows a new, genuinely historical definition of its task as that of linear causal explanation: ‘to trace the connection between the present conditions of nature and their causes in earlier times, in accordance with laws of action which we do not invent, but derive from the forces of nature as it presents itself to us now, and follow it back only as far as analogy permits—that would be a \textit{natural history’}.\textsuperscript{42}

Where the empirical evidence is lacking, the second-best method is in Kant’s opinion the heuristic use of analogies. Or, as he had put it in an earlier work, our conjectures would gain in probability ‘if one drew on the help of analogies, which must guide us in such cases where our understanding lacks the thread of infallible proof’.\textsuperscript{43} It will later be seen that this recommendation of analogical thinking was taken up by Kant’s pupil Herder, even if Herder did not always employ this method with the critical circumspection of his teacher.

Basic to Kant’s theory of science is the opposition between rational and empirical methods, as for example in his distinction between

\begin{itemize}
\item[40] WW IX, 15.
\item[41] AA VIII, 76.
\item[42] WW IX, 142.
\item[43] WW I, 336.
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explanations by means of a priori necessary mathematical laws, and explanations by means of merely empirical rules. The boundary between these two modes of explanation does, of course, shift in the course of Kant’s philosophical development. For example, in his late Opus postumum, he endeavours to ground further areas of science—above all chemistry—on a secure a priori foundation, but the dualistic distinction remains in principle valid. A parallel distinction between physical and biological modes of explanation is equally present in various works of Kant, but even here, the boundary between the two is fluid, although the distinction is never abolished. In the Universal Natural History, he defines it as follows:

No one should take exception if I venture to suggest that it should be possible to understand the formation of all the heavenly bodies, the cause of their motion, and in short, the origin of the entire present constitution of the universe before it will be possible to explain clearly and completely the production of a single herb or caterpillar on mechanical principles.

In this early work, Kant still clings to the traditional belief that the apparently purposive organisation of plants and animals should be explained not only by a special, non-mechanical (namely teleological) kind of causality, but should also be derived from the intentions of a rational creator. The same distinction between mechanical and biological spheres again appears in the Critique of Judgement of 1790 in the following statement: ‘absolutely no human reason can [...] hope to understand the production of even a blade of grass by purely mechanical causes.’ But this time, the teleological mode of explanation is no longer associated with the assumption of a higher reason. All scientific explanations must, according to the older Kant, be based on natural causes, although in the case of organic life, these must be supplemented by a teleological judgement which presupposes a purposive causality—but without

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45 WW I, 237.
47 WW X, 364.
48 Ibid., p. 331.
claiming that such purposes have any objective existence outside the teleological judgement of the viewer.\textsuperscript{49} The highest aim of science remains, as before, that of ‘mechanical’ explanation: that is, even organic processes are based on physical and chemical agencies.\textsuperscript{50} But where this mode of explanation is inadequate or impossible because of incomplete knowledge, the ‘regulative’ use of teleology comes to its aid. Thus, just as in physics, Kant’s views in biology on the limits of scientific explanation also become somewhat more flexible in his later years, although the distinction in principle between rigorous and less rigorous modes of explanation is never abandoned. What cannot yet be explained is now no longer automatically consigned to the sphere of theology, but referred to a supplementary, regulatory mode of explanation which in biology, for example, must remain in use until a ‘mechanical’ causality is discovered in this area too.

The last aspect of Kant’s theory of scientific explanation which calls for mention here concerns the nature of natural causes themselves. His attitude to this question alters considerably over the years. In his early works, for example, he still subscribes to Leibniz’s metaphysics: the Leibnizian monads as simple, dynamic units are for him the basic constituents of the universe.\textsuperscript{51} But even in his earliest works, he dispenses, in scientific contexts, with speculations on the inner nature of those forces (such as attraction and repulsion) which he holds responsible for all natural processes in the physical world. Here, as in so many cases, he doubtless follows the example of Isaac Newton, who rejected all speculation on the inner nature of gravitational force with his famous statement ‘hypotheses non fingo’.\textsuperscript{52} By the time of his \textit{Inaugural Dissertation} of 1770, he no longer makes any connection between the spatio-temporal world of science and its supposed metaphysical substratum.\textsuperscript{53} And in his critical phase, he recognises natural forces only in mathematical formulations and without any anthropomorphic associations. In his late period—that is, in his \textit{Opus postumum}—he admittedly no longer lays as much stress on the mathematical as on

\textsuperscript{49} Ibid., pp. 369f.
\textsuperscript{51} See, for example, his \textit{Monadologia physica} (1756), in WW II, 516–63.
\textsuperscript{52} Cf. Schimank, ‘Der Aspekt der Naturgesetzlichkeit’, p. 172; also WW VIII, 805.
\textsuperscript{53} Cf. Friedman, Kant and the Exact Sciences, p. 34.
the dynamic side of Newtonian physics, but without any intention of rehabilitating Leibniz’s metaphysics.\textsuperscript{54} Kant’s dynamism is still entirely phenomenological, and he has no interest in the metaphysical character of natural forces, but only in the scientifically grounded laws of their effects. To this extent, he holds the same opinion as most physicists towards the end of the eighteenth century, whose view is encapsulated, for example, in the definition of natural law in Gehler’s \textit{Physikalisches Wörterbuch (Dictionary of Physics)} of 1787–95:\textsuperscript{55}

> In reality, only the particular effects are present in nature, and the laws exist only in the ideas of natural scientists or the system of physics. Hence the knowledge of natural laws is also not yet a knowledge of the efficient causes and the mechanism whereby the phenomena are produced in time. The laws teach us only what is happening, not why and how it does so.

It is clear from this evidence that Kant’s views on natural history and the dynamics of natural processes were decisively influenced by his knowledge of the exact sciences since Newton. His cosmogony, for example, is based almost exclusively on Newton’s celestial mechanics, and even his theories of earth history are to a large extent dependent on mechanical laws, in order to explain, for example, the process of erosion and deposition through rain, rivers and sea.\textsuperscript{56} It seems at first sight as if the ideas of his pupil Herder on such questions are closely related to his; but on closer inspection, it emerges that Herder’s theoretical views, particularly his theories of scientific explanation, natural laws, and causality, are completely different from those of Kant.

**Theoretical Aspects: Herder**

Neither Herder’s cosmogony nor his theory of natural law shows that marked affinity to Newtonian physics which was characteristic of Kant’s thinking. Admittedly, there are frequent references in Herder’s works to mathematical concepts, laws of motion, and other aspects of mechanics.\textsuperscript{57} But unlike Kant, he employs such concepts and principles less in their

\textsuperscript{54} AA XXI, 479; cf. ibid., p. 226.
\textsuperscript{55} Gehler, III. Teil, cited by Schimank, ‘Der Aspekt der Naturgesetzlichkeit’, p. 144.
\textsuperscript{56} See, for example, AA IX, 296ff. (\textit{Physische Geographie}).
original scientific sense than as metaphors or analogies, as will shortly be seen, in order to describe non-physical processes such as the course of world history or the moral development of human beings. This tendency is already evident in his admission to an astronomer friend: ‘I lack [...] the use of higher mathematics, in which, as I suspect, there must at least be excellent analogies to enable us to reach higher levels in philosophy.’

Herder’s theory of natural laws is also quite different from that of Kant. Like Francis Bacon, whose writings he greatly valued, he regards such laws as inductive generalisations from experience, without any *a priori* components. In 1769, for example, he writes: ‘All laws of attraction are nothing other than observed qualities which we rearrange among themselves until a basic principle emerges [...]. The further we can generalise these [principles], the fewer and simpler the laws become, and the nearer we come to a single concept, i.e. the basic concept of the area in question.’

Herder’s natural laws are therefore by no means the same as the mathematical laws which play so great a part in Kant’s critical philosophy, but rather akin to those empirical regularities which Kant usually describes as ‘rules’. For Herder, the mathematical formulation of such laws is in any case irrelevant; in his attempts to refute the critical philosophy, he also indicates that he considers mathematical knowledge not as knowledge *a priori*, but as empirical. And as for the three laws of motion which Kant regards as *a priori* necessary truths, they are for Herder nothing more than identical propositions; the truth of such propositions may well be necessary, but their necessity is merely that of tautologies without any empirical content. It follows from this that Herder’s definition of natural laws is much more open, more comprehensive, and looser than that of Kant, so that he does not hesitate to designate numerous phenomena outside the sphere of the exact sciences as ‘natural laws’, for example in world history or the moral development of mankind.

60 SW IV, 465; cf. also SW XXI, 228f.
61 See, for example, SW XXI, 32f.
62 Ibid., 37f.
There is a similar divergence between Herder’s and Kant’s views on the role of teleology in natural science. It is true that, in the chapters of the *Ideas* on natural history, Herder tends to avoid a purely anthropocentric teleology as well as any reference to the supposed intentions of God. He writes, for example: ‘The philosophy of final causes has been of no benefit to natural history’; and we also know that he was strengthened in this opinion not only by the anti-teleological attitude of, for example, Spinoza, Bacon, and Buffon, but also by the objections of his friends Goethe and Knebel to certain teleological passages in the first draft of the *Ideas*.

He is, indeed, much less consistent in his treatment of teleology than the critical Kant. He makes no clear distinction, for example, between physical phenomena, which Kant believes can only be explained by mechanical principles, and biological processes, which are sometimes intelligible only with the help of teleology; on the contrary, in keeping with his Neo-Platonic, Leibnizian metaphysics of nature, he is always at pains to avoid any abrupt distinction between different realms of nature. He is also concerned, in his dual role as theologian and secular thinker, to leave open the choice between teleology and mechanical causality by describing the same phenomena both as natural events and as a consequence of divine intentions. But he sometimes falls back on unmistakably teleological models, without any critical reservations; and his opposition to Kant reaches its climax in his later years, when he condemns even the mechanical cosmogony of Kant’s *Universal Natural History* which had influenced his own cosmogony so profoundly in the *Ideas*, and instead praises the teleologically flavoured description of the universe as an expression of divine wisdom in Johann Heinrich Lambert’s *Cosmological Letters*.

On the real nature of natural causes, Herder again thinks quite differently from Kant. That Leibnizian doctrine of monads which Kant himself had recognised in his early years becomes in Herder’s case the foundation of a comprehensive metaphysics of nature in the Neo-Platonic tradition. Nature is for him a continuous hierarchy of

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63 SW XIV, 202.
64 Cf. Nisbet, *Herder and the Philosophy*, p. 54.
65 Cf. ibid., pp. 46f.
66 Cf. ibid., pp. 49ff.
67 Cf. ibid., p. 53.
68 SW XXIII, 525f.
forms, created, preserved, and transformed by indwelling forces.\(^{69}\) (He speaks rather of ‘forces’ than of monads, no doubt because the former expression sounds more down-to-earth and therefore more acceptable in a scientific context.) His concept of forces makes it possible for him to operate with at least terminological consistency between metaphysical, physical, biological and even psychological spheres; but this kind of dynamism is fundamentally different from the purely phenomenological dynamism of the older Kant, who rejects all speculation on the inner essence of natural forces. Herder does, it must be said, sometimes speak with a certain sympathy of the metaphysical scepticism of Hume and the phenomenological reservations of Newton and Kant;\(^{70}\) but in other cases, he equates the concept of causes to his own concept of forces and turns it into an animistic or spiritual subject. Thus he declares, for example, ‘[W]e rightly conclude that an active force, hence a subject, is basic here.’\(^{71}\) The whole of nature, for Herder, is therefore filled with dynamic elements which he at times describes as quasi-personal causal forces. When he adduces this principle in order to explain natural processes, his language, despite some similarities with the language of science, recalls neither that of exact Newtonian science nor that of modern natural philosophy, but rather that of Neo-Platonic metaphysics.

**Theoretical Aspects: Goethe**

Goethe’s view of scientific explanation is markedly different from that of Kant. But it has many points of contact with that of Herder (which is scarcely surprising in the light of his close collaboration with Herder around the time of the latter’s *Ideas*). But there are nevertheless considerable differences between Herder’s and Goethe’s understandings of nature. This may help to answer the question of why Goethe’s views on nature—in contrast to those of Kant and Herder—have remained so attractive to many people down to recent times.\(^{72}\)

\(^{69}\) Cf. Nisbet, *Herder and the Philosophy*, pp. 8–16.

\(^{70}\) See, for example, SW VII, 381; VIII, 177; XIII, 10, 47, 161, 358, etc.

\(^{71}\) SW XV, 533; cf. also SW XXI, 152.

\(^{72}\) For a range of examples of this positive reception see most of the contributions to the volume *Goethe und die Verzeitlichung der Natur*, ed. by Peter Matussek (Munich: C. H. Beck, 1998).
Goethe’s aversion to mathematical physics and Newtonian mechanics is so well known that it requires no further detailed examination here.\textsuperscript{73} But this aversion is at least in part responsible for the fact that Kant’s \textit{Critique of Pure Reason}, with its uncompromising dualism and close relationship to Newton’s physics, appealed much less to Goethe than did his \textit{Critique of Judgement}, which treats art and nature as parallel realms.\textsuperscript{74} Goethe’s concept of natural law is also fundamentally different from that of Kant. He often speaks, like Herder, of natural laws not only in the physical world, but in the biological sphere too; in comparative anatomy, for example, he discovers ‘the law [...] that nothing can be added to one part without a corresponding diminution of another, and vice versa’,\textsuperscript{75} and he regards the spiral tendency of plants as a ‘basic law of life’. \textsuperscript{76} It is plain that such laws are for Goethe—and for Herder—are rather general observations of regularities in the empirical world than \textit{a priori} necessary basic laws on the Kantian model. The terms ‘law’ and ‘rule’ indeed seem to be almost identical in meaning for Goethe,\textsuperscript{77} although the second suggests a simple regularity, whereas the first, with its juristic associations, also calls to mind duress and limitation (often in contrast to arbitrariness, contingency or immoderacy). The word ‘law’ has for Goethe—again like Herder—a much broader sense than in Newtonian physics. He speaks, for example, of ‘the universal law of separation and convergence, rise and fall, alternate balancing movements’ in various spheres of nature,\textsuperscript{78} and on one occasion defines the beautiful as ‘a manifestation of secret natural laws’;\textsuperscript{79} but in this case again, he is thinking of empirical regularities of a very general kind, and not of precise means of explanation and prediction of natural processes on the model of exact science.

\textsuperscript{74} Cf. LA I. Abt., IX, 90–94.
\textsuperscript{75} LA I. Abt., IX, 124 (1795).
\textsuperscript{76} LA I. Abt., I, 10 and 346, etc. (1831); cf. also LA I. Abt., I, 9 and 23 (1790); LA I. Abt., I, 9 and 62 (1817); LA I. Abt., I, 9 and 111 (1820); LA I. Abt., I, 10 and 393, etc. (1830).
\textsuperscript{77} Cf. LA I. Abt., I, 10 and 387 (1830); LA I. Abt., I, 9 and 341 (1824); LA I. Abt., I, 4 and 71 (1808).
\textsuperscript{78} LA I. Abt., I, 4 and 220 (1808).
This aspect of Goethe’s concept of law is perhaps most clearly in evidence in his writings on optics, particularly in his *Colour Theory*. The word ‘law’ is often used in the *Colour Theory* as a general description of periodically recurring natural processes, for example, in Goethe’s reference to ‘the first basic law, already familiar to the ancients, that the eye is drawn together and contracted by darkness and conversely released and expanded by brightness’. Goethe proposes the new term *Urphänomen* (archetypal phenomenon) as a more appropriate description of the fundamental colour phenomenon—probably because he wishes to distance himself from the current Newtonian associations which the term ‘law’ had acquired in the context of physics. For as he says, there are ‘higher rules and laws, which do not, however, reveal themselves through words and hypotheses to the understanding, but [...] through phenomena to the intuition. We call them archetypal phenomena, because nothing lies above them in the world of appearance’.

It therefore follows that Goethe’s conception of natural law as an empirical generalisation is very close to that of Herder—except that, in Goethe’s case, the process of generalisation does not lead to an abstract concept, but to a visual intuition. He distances himself much more decisively than Herder, however, from the belief that the goal of scientific generalisation is the explanation of natural processes, and declares: ‘One should not look for anything behind the phenomena. They themselves are the theory’; or again: ‘we do not ask for causes here, but for the conditions under which the phenomena appear’. His view of nature is therefore fundamentally descriptive, and hence closer to older natural history than to modern science. For this reason, he is also much less interested than Kant and Herder in the oldest epochs of earth history, and he leaves the question of the natural evolution of living forms open; his aim is to describe natural processes which are still active, without trying to determine their causes or genetic stages in earlier eras which are no longer accessible to observation. He therefore states that his morphology seeks ‘only to represent, and not to explain’; and although

81 LA I. Abt., IV, 71 (1808).
83 HA XII, 432.
84 LA I. Abt., XI, 40 (1798).
85 LA I. Abt., X, 140 (1795).
he often speaks of the ‘metamorphosis’ of natural organisms, he does not have in mind the descent of such organisms from earlier organisms which are no longer extant, but only the diverse manifestation of constant basic forms in each individual organism (such as the basic form of the leaf in different organs of the plant) or the morphological differences between diverse species (for example, in the skeletons of vertebrates).

Goethe’s rejection of teleology is much more consistent and thorough than that of Herder, so that he is able to welcome Kant’s discussion of teleology in the Critique of Judgement.86 But his objections to teleological interpretations of nature are not only indebted to the arguments of Kant, Spinoza, and others against the projection of human intentions and attributes into nature; he rejects them also for the same reason that he rejects all explanations of natural processes by mechanical or causal agencies, because such explanations artificially detach a linear series of causes and effects from the unitary, multi-dimensional whole of nature, in which all individual entities mutually condition each other. As he himself puts it, ‘if so many beings interact with one another, where are we able to gain the insight in order to decide what is dominant and what is subordinate, what is destined to lead and what is obliged to follow?87 And although, like Herder, he sometimes appeals (for instance in some of his late pronouncements on human immortality) to Leibnizian dynamism as a metaphysical system,88 he usually takes care not to explain natural processes as the effect of invisible forces. He says, for example, ‘the word “force” denotes primarily something physical or even mechanical’, and takes the view that anthropomorphic growth forces in biology are only inadequate aids to help us to form some conception of what is in fact incomprehensible.89 His conception of natural forces—at least in scientific contexts—is therefore basically phenomenological, like that of Kant.

For all these reasons, it is plain that Kant, Herder, and Goethe tried to solve the problem of the historicity of nature in different ways, and that Goethe in particular diverges from the others—and from his age as a whole—inasmuch as he is prepared only with major reservations

86 LA I. Abt., IX, 92 (1817)
87 LA I. Abt., XI, 245
88 See, for example, Goethes Gespräche mit Eckermann, ed. by Franz Deibel (Leipzig: Insel-Verlag, 1921), p. 524 (3 March 1830).
to apply historical models and linear models of explanation to nature; this is true not only of his thoughts on the evolution of living organisms, but also of his reflections on cosmogony and earth history as well as of his own theory of science. His relative indifference to the temporal dimension is reminiscent not so much of modern science as of earlier natural history, whose main task was to describe an unchanging hierarchy of natural forms. Herder’s view of nature, of course, is likewise in some respects old-fashioned—especially his belief in that Neo-Platonic metaphysics of nature which Kant had already rejected in his pre-critical period and which Schelling and other Romantics vainly tried to rescue around the turn of the century. But Herder is also decidedly modern in his consistently historical outlook, which he develops above all in his pronouncements on human history. For him, as also for Kant and Goethe, human history is in a certain sense a natural process. In conclusion, this essay will examine the attempts of these three thinkers to define more closely the relationship between nature and human history.

**Human History: Kant**

The continued growth of secularisation in the eighteenth century reinforced the tendency to look on world history as a natural process governed by natural laws and at least to some extent capable of explanation by scientific methods.\(^90\) This tendency begins with Dubos and Montesquieu, and reaches its climax in the deterministic systems of the nineteenth century such as those of Marx, Comte, and Taine. Kant, and above all Herder, played a significant part in this development; Goethe was affected to a much lesser degree. The relevant statements of all three thinkers on history are almost exclusively of a theoretical nature. It will therefore be unnecessary to retain there that distinction between empirical and theoretical pronouncements which served to articulate the first part of this essay.

Kant’s short essay *Idea for a Universal History from a Cosmopolitan Point of View* (1784) is his most important attempt to understand human

history with the help of scientific methods.\textsuperscript{91} Herder is not mentioned in it, but the title and theme of the essay recall his \textit{Ideas for the Philosophy of History}; the first part of the latter, published a few months before Kant’s essay, was in fact known to Kant before he published his own essay.\textsuperscript{92} Both works expressly present history as a natural process and consider the possibility of treating it as an object of scientific analysis. But since Kant published two highly critical reviews of Herder’s \textit{Ideas} soon afterwards, it is entirely possible that he intended to show in his essay of 1784 how the philosophy of history might be conducted in a more rigorous manner than he believed it had been in the work of his former pupil.

The main difficulty which Kant encountered in his presentation of history as a natural process was his own dualistic conception of human nature; for in Kant’s moral philosophy, man is not only a natural being, but also a free moral subject. He attempts to solve the resulting problem by arguing that the behaviour of humans as natural beings (who are consequently determined by natural laws) gradually enables them to develop a rational consciousness of their own moral freedom, and so to emancipate themselves from the control of nature. But even before they reach that stage, human beings, in contrast to animals, are already free beings to the extent that they can choose between different kinds of behaviour (irrespective of whether the choice they make is morally good or evil).\textsuperscript{93} But even if the human will is in this sense inherently free, the actions it initiates are nevertheless for Kant ‘natural events’. As he explains, ‘hence the \textit{phenomena} to which it [i.e. the human will] gives rise, namely human actions, are determined, just like any other natural event, by general laws of nature’.\textsuperscript{94}

But it is clear from the examples cited by Kant that the actions in question are not in the same sense natural as mechanical processes in inanimate nature, because such actions are always guided by conscious and unconscious intentions;\textsuperscript{95} they are ‘natural’ only in the sense that

\textsuperscript{91} WW XI, 33–50.
\textsuperscript{93} See Erich Adickes, \textit{Kant als Naturforscher}, 2 vols (Berlin: De Gruyter, 1924–25), I, 463.
\textsuperscript{95} See, for example, WW XI, 34.
they are motivated by natural desires and impulses such as ambition, greed, aggressiveness, competitiveness, etc. As an expression of selfishness, such impulses are, of course, potentially antagonistic. But according to Kant, this very antagonism between individuals or states, in combination with their mutual dependence for the satisfaction of their needs, constitutes a natural mechanism which drives the development of human capabilities and ultimately compels the individuals or states in question to establish, in their own interests, a peaceful national or international system to guarantee the further development and security of all. This natural process is in the course of time confirmed and accelerated by the insight of reason (for after all, reason itself is, for Kant, in a certain sense an ‘implanted’ natural proclivity of human beings) until the opposition between nature and reason is finally overcome.

It can clearly be seen from Kant’s remarks that he certainly does not regard the supposed natural laws which govern this process of political progress as equivalent, for example, to the laws of mechanics. They must rather be of a statistical character, for he compares the events in which they can in his opinion be detected to those statistical regularities which are manifest in births, marriages, and deaths or in meteorological observations. He presumably believes that similar statistical data (for example, on the increasing rarity of wars, the spread of republican constitutions, the growing interdependence of various states in world commerce, etc.) provide a firm basis for laws which have yet to be discovered and will eventually confirm the progressive direction of history. The laws in question will therefore be of the same kind as, for example, the statistically based laws of supply and demand, which were already beginning to be formulated in eighteenth-century economics.

96 WW XI, 38.
97 WW XI, 42.
98 WW XI, 46.
99 WW XI, 37f. and 42.
101 Cf. WW XI, 38, 41, 46f. and 50.
102 WW XI, 33f.
Kant nevertheless also cites the discoveries of recent astronomy in his essay on the philosophy of history—if only as an analogy to describe the discoveries he hopes for in the social sciences. He says, for instance, of the creative activity of nature: ‘Thus it produced a Kepler, who subjected the eccentric orbits of the planets to specific laws in an unexpected way, and a Newton, who explained these laws as the result of a universal natural cause.’\(^{104}\) And although he does not explicitly say so, that natural antagonism between selfish and constructive social tendencies which he regards as the driving force of history is obviously conceived by analogy to the forces of attraction and repulsion of his own Universal Natural History and Newton’s celestial mechanics.\(^{105}\) The scientific background becomes clearer when he compares the search for a long-term progressive tendency in world history to the attempts of the astronomers to track the barely perceptible path of the sun and its satellites through the galactic system.\(^{106}\) Again by analogy with mechanics, the mechanism of human selfishness will finally compel human beings to identify ‘a law of equilibrium’ between states and to base on it an international system which ‘can automatically maintain itself’.\(^{107}\)

These efforts of Kant to discover gradual political progress in history with the aid of scientific models can scarcely be contested on grounds of method, even if the empirical evidence he hopes for is still incomplete. But his further contention that a ‘plan of nature’ is visible in history,\(^{108}\) his conviction that nature has the ‘intention’ to develop all human capacities and establish a liberal law-governed state,\(^{109}\) and his replacement of the word ‘nature’ towards the end of his essay by the word ‘providence’\(^{110}\) all seem to belong to an earlier period in the history of philosophy. They recall rather the optimistic teleology of Leibniz than the Critique of Pure Reason. But we must not forget that these objections apply only to supplementary arguments in support of Kant’s main thesis, which is itself based on purely naturalistic premises. The very title of Kant’s essay indicates that his teleological interpretation of the causal mechanism of history is only a regulative ‘idea’ of reason, i.e. a working hypothesis.

\(^{104}\) WW XI, 34.  
\(^{105}\) Cf. AA XV, 590f. where this analogy is more prominently expressed.  
\(^{106}\) WW XI, 45.  
\(^{107}\) WW XI, 43f.  
\(^{108}\) WW XI, 34.  
\(^{109}\) WW XI, 39.  
\(^{110}\) WW XI, 49.
designed, among other things, to promote the alleged progress in history; it should therefore on no account be mistaken for a constitutive principle. The function of this regulative idea is also, not least, rhetorical: it is meant to prove itself as a self-fulfilling prophecy by gaining the reader’s cooperation in implementing it. As so often in Kant’s writings on empirical topics—such as nature and history—his methodological circumspection and consistency, i.e. the systematic reservations with which he underpins his main thesis, are much more impressive than his empirical deductions which, in keeping with the state of then existing knowledge, are based on highly selective experience.

Kant’s reflections on the philosophy of history are in this respect much more impressive than those of Herder’s *Ideas*. This, of course, is partly due to the fact that his short essay sets itself a much more modest aim than Herder’s wide-ranging work. Kant’s pronouncements are scientifically more plausible because he chooses a very precise causal connection and a linear mode of explanation on a scientific model in order to furnish a proof that the dialectic of conflict and interdependence, of competition and need in human society, must generate a quite specific long-term tendency in political history. Herder’s aim is much more comprehensive and ambitious. He, too, attempts to apply concepts and models of scientific origin to the study of history; but the results of this attempt are unconvincing, and his real achievement as a philosopher of history relies on quite different methods to those of science. (His first work on the philosophy of history, *Another Philosophy of History* (1774), is not considered here because natural history and scientific models play a much more limited part than in the later—and much more extensive—*Ideas*.)

**Human History: Herder**

Unlike Kant’s philosophy, Herder’s holistic view of nature in the *Ideas*, which is significantly influenced by Spinoza’s monism, makes no abrupt distinction between the realm of natural necessity and that of human freedom. Both realms are part of a single continuum in which all transitions are gradual. For him, too, man is also ‘a free creature’ and ‘the first emancipated being in creation’;\(^\text{111}\) but his primary concern in

\(^{111}\) SW XIII, 146f.
the Ideas is to present human history as a natural process, as he himself admits: ‘The whole of human history is a pure natural history of human forces, actions, and impulses in time and place.’ In contrast to Kant, he makes no explicit attempt to resolve the tension in his work between natural causality and free human intentions.

Generally speaking, Herder follows two complementary strategies in applying models derived from science and natural history to human history. Firstly, he uses his knowledge of natural history and physical geography—that is, of the environment in the widest sense—in order to throw light on the characteristic qualities of numerous human societies in past and present, and thereby to explain their distinctive contributions to history as far as possible by natural causes. This strategy, which forms the core of his ‘historicism’, is highly successful and had a profound effect on the philosophy of history and historiography of the nineteenth century. But its main concern is with the internal development of individual nations rather than their interaction and succession in the world-historical process. In his treatment of world history proper, he employs the second of his main strategies to explain historical events by propounding historical laws which have a certain similarity to familiar laws of physics and mechanics. This strategy is less successful than the previous one, for reasons that will now be considered further.

Herder speaks, particularly in the Ideas, so often of ‘laws’ and ‘natural laws’ in connection with human actions and human history that the concept of law is obviously of fundamental importance to his thought. But the significance of this concept is so wide and at the same time so variable that its precise sense in particular contexts is often difficult to determine. For example, it is often unclear whether Herder intends to discover similar or identical laws in nature and history, or whether, in employing the word ‘natural law’ and related expressions, he is merely borrowing them from science as analogies and metaphors in order to denote roughly comparable regularities in human life. Sometimes, he

112 SW XIV, 145.
seems to take the view that identical laws are at work in both areas, as when he declares: ‘Thus, one and the same law extends from the sun, and from all suns, to the smallest human action. What preserves all beings and their systems is only One: the relation of their forces to periodic rest and order.’\footnote{116 SW XIII, 234; cf. also SW XIII, 16.}

But in other cases, he seems to speak not of an identity, but an analogy, as when he envisages the possibility of a ‘physics of history’,\footnote{117 SW V, 558.} whose laws are allegedly active on a higher level than that of physics proper, or when he suggests that ‘mind and morality are also physics, and serve the same laws, which are all ultimately dependent on the solar system, but in a higher order’.\footnote{118 SW XIII, 20; cf. SW XIV, 248.} Besides, since Herder regards the whole of nature, including human society, as a unitary whole, he is always anxious to detect similarities between its different areas, and to discover analogous processes on different levels.\footnote{119 Cf. Hans Dietrich Irmscher, ‘Beobachtungen zur Funktion der Analogie im Denken Herders’, Deutsche Vierteljahrsschrift für Literaturwissenschaft und Geistesgeschichte, 55 (1981), 64–97.} This is no doubt one of the reasons why he uses the term ‘natural law’ in so wide a range of senses and why it is often difficult to determine whether he considers the relevant parallels as identities or only as analogies.\footnote{120 Cf. Hans Dietrich Irmscher, ‘Aneignung und Kritik naturwissenschaftlicher Vorstellungen bei Herder’, in Texte, Motive und Gestalten der Goethezeit. Festschrift für Hans Reiss, ed. by John L. Hibberd and Hugh Barr Nisbet (Tübingen: Niemeyer, 1989), pp. 33–63 (p. 53).} His historical laws are for the most part commonplaces, for example when he mentions an alleged law ‘which creates order out of chaos’\footnote{121 SW XIV, 215.} or when he speaks of ‘laws of a disturbed balance’ in both nature and history.\footnote{122 SW XIV, 218.}

The concepts which he uses in such cases are general enough to include both areas; but for the same reason, they are rarely specific enough to have an intelligible relation to concrete situations (as with his favourite concept of a ‘nemesis’ or ‘Adrastea’ in history, which he employs both in a mythological and in a physical or mechanical sense).

This criticism applies in particular to those historical laws which Herder propounds in the fifteenth book of the *Ideas*.\(^{124}\) He takes his lead here from the attempts of the mathematician Johann Heinrich Lambert to apply mechanical concepts such as equilibrium, steady states and pendular oscillation to non-mechanical phenomena—for example, social systems—and himself claims to detect a regular cycle in world history whereby reason and order are repeatedly restored in spite of all threats and will in the long term increasingly prevail over unreason and disorder. He writes, for example: ‘All destructive forces in nature must in the course of time [...] give way to the forces of preservation’\(^{125}\) and ‘abuses will punish themselves, and disorder will with time become order through the tireless efforts of an ever-growing rationality’.\(^{126}\) In the historical ‘laws’ themselves, such propositions as these are simply reformulated by the addition of metaphors from mechanics, as when Herder declares ‘that when a being or system of beings is displaced from this steady state of its truth, goodness, and beauty, it will return to this state through inner force, either in oscillations or in an asymptote’.\(^{127}\) But no mechanical metaphors or analogies can lend such assertions credibility, because the pairs of concepts they contain (order/disorder, destruction/preservation, abuses/rationality) have no reference to any objectively definable conditions; they are rather the result of subjective value judgements.

It must admittedly not be overlooked that metaphors and analogies from the realm of science were particularly popular in Herder’s day.\(^{128}\) Kant employed such analogies, as already noticed, in order to designate supposedly progressive tendencies in history, for which he expected statistical evidence to emerge in the future. But in the absence of such evidence, he took care not to formulate historical ‘laws’, and simply expressed the hope that some future student of history might discover a law of this kind. But Herder had no such inhibitions. He formulates several so-called ‘natural laws’ of history; and although he uses the same

\(^{124}\) SW XIV, 213–52.
\(^{125}\) Ibid., p. 213.
\(^{126}\) Ibid., p. 249.
\(^{127}\) Ibid., p. 226.
analogy as Kant for the discovery of such laws (namely the attempts of astronomers to track the scarcely perceptible course of the sun through the Milky Way), he does not apply this analogy to objectively identifiable political conditions such as Kant was particularly interested in, but to ‘the scarcely visible progress of the good in history’\textsuperscript{129}—that is, of a moral tendency which can hardly be identified by objective means. The scientific terminology which Herder makes use of in the \textit{Ideas} accordingly offers no prospect of a new method of scientific explanation of historical processes. It serves rather as a rhetorical means of support for the historical and metaphysical optimism of his later years. This is confirmed by the fact that, towards the end of the fifteenth book of the \textit{Ideas}, he abandons the language of mechanics in favour of traditional teleological concepts such as ‘providence’, ‘fate’, ‘wise goodness’, etc.\textsuperscript{130} Thus, like his teacher Kant, he outlines a teleology of history which claims to be based on a ‘natural’ providence; but he does not supply those methodological reservations and qualifications which distinguish the critical philosophy from pre-critical metaphysics.

Although the foregoing account of Herder’s attempts to explain the development of history as a natural process may seem all too one-sided and negative, it must not be forgotten that these attempts form only a small part of his work as a philosopher of history, and that the earlier and more original of his two works on that subject, namely \textit{Another Philosophy of History} has not been considered here. So long as he confined himself to other means of understanding history than those of science, he wrote with genuine originality, as when he conjures up past ages with vivid imagination and empathetic understanding in \textit{Another Philosophy} or describes alien forms of culture and their geographical determinants as phenomena of natural history in the ethnological chapters of the \textit{Ideas}. And in \textit{Another Philosophy}, he does not yet seem to feel the need to set up quasi-scientific natural laws of history: his metaphors, which are in part drawn from the realm of natural history and science, are still unmistakably metaphors, and his analogies are plainly nothing other than analogies. Thus he compares the natural development of individual nations and their succession in the world-historical process to the stages of human life or the growth of a tree and its branches.\textsuperscript{131}

\textsuperscript{129 SW XIV, 235.}
\textsuperscript{130 SW XIV, 244.}
\textsuperscript{131 SW V, 499, 512, 528f., 566, 575, etc.}
On the other hand, he describes the interruption or obstruction of this natural development by violent or regressive means with the help of metaphors from mechanics: thus, the absolutist Prussian state, for example, is likened to a machine, just as modern culture as a whole has allegedly lost its former spontaneity and likewise become mechanical. But when he attempts in the third part of the *Ideas* to identify linear causal processes in world history by analogy with mechanics and combines them with a theory of moral progress, he places excessive demands on his basically very loose comparisons. His ‘physics of history’ remains, as before, a completely utopian aim.

Human History: Goethe

No single writer had so much influence on Goethe’s historical thought as Herder. But simply because Goethe absorbed this influence above all in his early years (namely around the time of Herder’s *Another Philosophy*), he remained relatively unaffected by Herder’s later efforts in the third part of the *Ideas* to discover quasi-mechanical laws of world history. Goethe’s conception of history remains indebted, until his final years, to the historical scepticism of Herder’s early treatise, which had attacked Enlightenment optimism and recommended historical relativism and an empathetic understanding of earlier ages of history.

Goethe nevertheless does share the older Herder’s view in the *Ideas* that nature is a unitary swhole, of which both the lives of individuals and human history in general form integral parts. He is consequently no less ready than Herder to discover analogies between different levels of organisation (for example, in the novel *The Elective Affinities* between human behaviour patterns and the reactions of chemical compounds). Like Herder, he makes no sharp distinctions between natural necessity and human freedom, and declares that ‘there is yet everywhere only one nature, and the traces of dismal, passionate necessity also run inexorably through the realm of serene, rational freedom’. For him, as for Herder, the healthy development of both the individual and society at large is analogous to the growth of living organisms, and he likes to describe such processes with the help of

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133 Goethe, HA VI, 621.
biological metaphors. Conversely, mechanical metaphors have for him—as for the young Herder—a predominantly negative range of meaning: in their application to nature and history, he therefore usually associates them with violent and destructive occurrences.

Since world history contains all too many events of this kind, it is fully understandable that Goethe in general passes very negative judgements on it. He sees in it no regular development and consequently makes no attempt to propound historical laws in analogy to the laws of physics. Quasi-mechanical laws of progress like those in Herder’s Ideas are quite unthinkable for him; like nature itself, world history is in his opinion far too complex to be reduced to a few simple formulas of this kind. The kind of historiography which most appeals to him sets itself more modest aims, as for example in cultural history, which depicts the quasi-organic development of a single, clearly defined era in culture or art such as that of ancient Greece, Persia, or the Florentine Renaissance.

Even in cultural history, such eras are, of course, rather the exception than the rule; they are all too often interrupted or extinguished by unforeseen and violent incursions from outside. The older Goethe consequently gives great weight to the role of chance and unforeseen events in history, whereby the noblest endeavours are frustrated by human folly or arbitrary intervention. But this sceptical attitude towards history—especially political history—is already apparent in his early works, above all in the dramas Götz von Berlichingen and Egmont, and it was later intensified by the experience of the French Revolution. The important role which what he calls ‘the incommensurability of history’ plays in his final years is, of course, in direct contradiction to the historical optimism of the late Enlightenment as defended by Kant and the later Herder. If history really is influenced by regular laws, it is in Goethe’s view difficult, or even impossible, to distinguish these from the contingent and the arbitrary: ‘Law and chance interact, and the individual spectator often ends up by confusing the two, as is particularly evident in biased historians’.


135 Cf. WA I. Abt., XXVIII, 68–70; LA I. Abt., IV, 221; also Nisbet, Goethe and the Scientific Tradition, pp. 54–58


137 WA II. Abt., III, 134 (1810).
Although Goethe, no less than Herder, is theoretically convinced that nature and history are equally important parts of the world as a harmonious whole, it is nevertheless comprehensible why he often presents nature as the realm of the law and history as the realm of the arbitrary. He was, of course, always aware (especially in his final years) that chaos, or ‘the aimless power of unbridled elements’ may break in at any time upon the peaceful life of nature. But such convulsions remain rather the exception than the rule, whereas chance seems to him in principle to play a considerably greater role in history than in nature, since human actions are more variable and unpredictable than most natural processes. (Unlike Kant, for example, Goethe does not appear to have considered the possibility that at least statistically predictable regularities might be present in collective human behaviour.) But Goethe is also aware of the fact that there is a certain methodological difference between natural science and the study of history, a difference which the young Herder had recognised in Another Philosophy of History, but apparently lost sight of in the later Ideas. For the role of the observer of history is in an important respect different from that of the observer of nature. Each individual has their own necessarily incomplete perspective on events, which coincides only partially with that of other individuals; and the process of history itself cannot be distinguished nearly so easily as that of nature from the subjective viewpoint of the observer, because history can only be constituted by the reports of contemporary observers, each of whom saw the events from their own point of view and in terms of their own teleology. There is consequently no privileged, absolute perspective, and all general judgements on history are necessarily dubious. For this reason, Goethe confines himself in his History of Colour Theory to a sparse commentary on the extensive extracts he includes from the source materials, through which he lets the work of past colour theorists speak directly to the reader. For the same reason, he tends to favour those forms of historical writing which focus on personal experience, such as biography, autobiography, memoirs, travelogues,

138 HA III, 309 (Faust, Part II, line 10,219).
etc., and in which history is viewed from an unambiguously personal perspective.

The one kind of regularity which Goethe recognises in the process of history is the simple alternation of opposite tendencies such as constructive and destructive eras or (particularly in cultural history) the cycle of growth, efflorescence, and decline. Any reference to a teleology of providence or moral progress, such as Herder and Kant in their different ways claimed to detect, is for him out of the question. It is therefore no wonder that he was not impressed when the young historian Heinrich Luden told him in 1806 that he had given up mathematics for history. Goethe commented: ‘what the historian [...] regards as truth is always only truth for him, only subjective truth [...]. But mathematical truth is the same for everyone’. In short, a historical science in the proper sense is for Goethe an impossibility. His historical scepticism finally becomes so extreme in his last years that he can describe history as ‘a web of nonsense’ or ‘a mass of follies and wickedness’.

If we disregard such ill-tempered outbursts, history ultimately consists for Goethe of the events themselves, although these are inevitably communicated through the necessarily biased reports of individual observers. The best we can obtain is a more or less factual description of the events, which we interpret from our own perspective. And the most we can hope for is to project ourselves to some extent, by empathy and imagination, into past epochs of culture. All theoretical initiatives are one-sided and inadequate, and every attempt to discover a linear development and to explain past events by causal or teleological models must result in a simplification, or indeed distortion, of the indeterminable multiplicity of the events in question.

Finally, we may conclude that Goethe’s views on science and the study of history are internally consistent and mutually compatible, although he can accept only with major reservations that the methods of each are transferable to the other. Nature does indeed have a history,


\footnote{Conversation with Heinrich Luden, 19 August 1806, in \textit{Goethes Gespräche}, ed. by Wolfgang Herwig, 5 vols (Munich: Deutscher Taschenbuch Verlag, 1998), II, 121.}

\footnote{Conversation with Friedrich von Müller, 17 December 1824, in \textit{Goethes Gespräche}, III/1, 742.}
but the empirical knowledge necessary for its reconstruction were in his day so limited that suspense of judgement often seemed to him the only alternative to arbitrary speculation. In any case, causal explanation is not, in his opinion, the proper task of science. The scientist is for him primarily still a natural historian in the older sense of that term, and not a historian of nature, because he ought rather to be occupied with description and classification than with explanation and prediction.

If Goethe then has strong reservations about applying historical and linear ways of thinking to nature, he is no less sceptical regarding the possibility of applying scientific methods to human history—firstly, because he sees linear modes of explanation as no less inadequate in a historical context than in natural history, and secondly, because the observer of history cannot possibly attain the degree of objectivity required by the observer of nature. In other words, there cannot be a science of history, but at most a natural history, on the model of Herder’s historicism, of certain clearly defined aspects of the past (and particularly cultural history).

Conclusion

The foregoing comparisons between Goethe’s, Kant’s, and Herder’s thought set out to present, among other things, Goethe’s ideas on nature and history in their historical context. It has been shown that Goethe’s views are by no means typical of his times. His scientific beliefs are idiosyncratic and opposed to that Newtonian tradition which underpinned Kant’s theory and practice of science; and although his view of nature is based on the same Neo-Platonic premises as that of Herder, Herder’s own views on science are fundamentally different from those of Goethe, both in respect of his readiness to speculate beyond the limits of experience and in his essential agreement with the aims of Newtonian science. Goethe’s historical thought is likewise remote from that of Kant’s (albeit regulative) teleological optimism and his efforts to apply scientific models and methods to history. And although he was strongly influenced by the young Herder’s historical relativism and scepticism towards the Enlightenment’s theories of progress, he parts company with the older Herder’s attempts—which, despite the latter’s rejection of the critical philosophy, are closely
related to those of Kant—to detect quasi-scientific laws of progress or moral retribution in history.

From today’s perspective, the views of all three thinkers are, of course, essentially obsolete. Kant’s philosophy of science remains, as before, an intellectual achievement of the highest order. But the theory of relativity has superseded the whole of Newtonian physics, on which both Kant’s *Critique of Pure Reason* and *Metaphysical Elements of Science* were based, and Kant’s assumption of a firm *a priori* structure of space and time as the foundation of all empirical knowledge has likewise been refuted; and since the theory of relativity and quantum mechanics have applied two quite different principles to different aspects of nature, a consistent unitary theory of nature as a whole is no longer available. It follows from this that no single theory of science can now claim absolute validity; its validity can only be partial and provisional. The Neo-Platonic metaphysics which underpins Herder’s and Goethe’s image of nature was already obsolete by the end of the eighteenth century, and is of only historical interest today, while the individual scientific theories of the three thinkers here discussed were soon superseded by the progress of geology, the theory of evolution, and other branches of science.

It is therefore not at first sight obvious why Goethe’s view of nature still holds a much stronger attraction today than that of Kant or Herder. The main reason for this is that Kant’s and Herder’s views of nature are far more heavily indebted to the now obsolete science of the eighteenth century than Goethe’s, whereas Goethe’s view is fundamentally different both from the dominant scientific tradition of his age and from modern science in general. Although his individual theories are indeed for the most part obsolete, his image of nature as an organic whole of which human beings are an essential part and his rejection of all linear models of explanation still strike a sympathetic note with many readers for whom modern science has acquired too many negative associations. It is therefore not surprising that the ecological movement of recent decades has awakened a new interest in Goethe’s science. The instrumentalisation of nature by modern technology, which itself owes its origin to that linear and mechanistic way of thinking to which Goethe was strongly opposed, has had disastrous consequences for the environment; and these have understandably created a demand for an alternative view of nature that treats it not just as a means, but as an end
in itself. For those in search of an image of nature of this kind, Goethe’s writings on science therefore have obvious advantages. But this fact does not provide a justification for condemning modern science itself as misguided and presenting Goethe’s view of nature as alone correct. Such judgements are applicable at most to certain ethical attitudes that are often—but by no means necessarily—associated with this or that attitude towards nature. The two views of nature are in fact not so much mutually exclusive alternatives as complementary perspectives from which nature can be viewed with different purposes in mind.

For it is entirely possible to consider nature as a whole as an end in itself, and at the same time to regard particular parts of it as means of realising our current aims by developing and applying the requisite technology which modern science has made possible.

In the philosophy of history too, the thought of Kant and Herder seems to some extent more antiquated from today’s point of view than that of Goethe (although Kant’s political philosophy is still rightly taken seriously). For the moral optimism and teleological belief in providence of Kant and the later Herder cannot readily be reconciled with the catastrophes of the twentieth century, while the negative political effects of the allegedly ‘scientific’ theories of history of Marx and others, along with the manifest failure of predictions of the future based on such theories, have aroused widespread distrust of the supposedly necessary historical laws and scientific claims of the corresponding philosophies of history. Against this background, Goethe’s sceptical thoughts on history and his holistic view of nature still retain their attraction.

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