

By the same author

Capitalism and the Historians

The Constitution of Liberty

The Pure Theory of Capital

The Sensory Order: An Inquiry into the

Foundations of Theoretical Psychology

The Road to Serfdom

Studies in Philosophy, Politics and Economics

Law, Legislation and Liberty

Volume 1 Rules and Order

Volume 2 The Mirage of Social Justice

Volume 3 The Political Order of a Free Society (*forthcoming*)

F. A. Hayek

NEW STUDIES

*in Philosophy, Politics,
Economics and the
History of Ideas*



THE UNIVERSITY OF CHICAGO PRESS

First published in 1978
by The University of Chicago Press, Chicago 60637
and Routledge & Kegan Paul Ltd., London WC1E 7DD
© 1978 by F. A. Hayek. All rights reserved

Printed in Great Britain by The Camelot Press Ltd

International Standard Book Number: 0-226-32069-3
Library of Congress Catalog Card Number: 77-88475

Contents

Preface

vii

Part One

PHILOSOPHY

<i>Chapter 1</i>	The Errors of Constructivism	3
<i>Chapter 2</i>	The Pretence of Knowledge	23
<i>Chapter 3</i>	The Primacy of the Abstract	35
<i>Chapter 4</i>	Two Types of Mind	50
<i>Chapter 5</i>	The Atavism of Social Justice	57

Part Two

POLITICS

<i>Chapter 6</i>	The Confusion of Language in Political Thought	71
<i>Chapter 7</i>	The Constitution of a Liberal State	98
<i>Chapter 8</i>	Economic Freedom and Representative Government	105
<i>Chapter 9</i>	Liberalism	119
<i>Chapter 10</i>	Whither Democracy?	152

Part Three

ECONOMICS

<i>Chapter 11</i>	Three Elucidations of the Ricardo Effect	165
<i>Chapter 12</i>	Competition as a Discovery Procedure	179
<i>Chapter 13</i>	The Campaign Against Keynesian Inflation	191
1	Inflation's path to unemployment	192
2	Inflation, the misdirection of labour, and unemployment	197
3	Further considerations on the same topic	209
4	Choice in currency: a way to stop inflation	218
<i>Chapter 14</i>	The New Confusion About 'Planning'	232

[v]

Contents

Part Four

HISTORY OF IDEAS

<i>Chapter 15</i>	Dr Bernard Mandeville	249
<i>Chapter 16</i>	Adam Smith's Message in Today's Language	267
<i>Chapter 17</i>	The Place of Menger's <i>Grundsätze</i> in the History of Economic Thought	270
<i>Chapter 18</i>	Personal Recollections of Keynes and the 'Keynesian Revolution'	283
<i>Chapter 19</i>	Nature v. Nurture Once Again	290
<i>Chapter 20</i>	Socialism and Science	295
Postscript		309
Name Index		311

Preface

This long-contemplated further volume of *Studies* has been delayed mainly by uncertainty about whether I ought to include the various essays preparatory to my inquiry on *Law, Legislation and Liberty* which for years I doubted my ability to complete. Much the greater part of what I published during the last 10 years were preliminary studies for that work which had little importance once the chief conclusions had found their final form in that systematic exposition. With two volumes published and the third near completion I feel now sufficiently confident to leave most of those earlier attempts dispersed as they are and have only included in this volume two or three of them which seem to me still to provide additional material.

On the whole the present volume thus deals again equally with problems of philosophy, politics and economics, though it proved to be a little more difficult to decide to which category some of the essays belonged. Some readers may feel that some of the essays in the part on philosophy deal more with psychological than with strictly philosophical problems and that the part on economics now deals chiefly with what as an academic subject used to be called 'money and banking'. The only difference in formal arrangement from the first volume is that I have thought it appropriate to give the kind of articles which in the earlier volume I had placed in an appendix the status of a fourth part under the heading 'History of Ideas' and to amend the title of the volume accordingly.

Of the articles contained in this volume the lectures on 'The Errors of Constructivism' (chapter 1) and 'Competition as a Discovery Procedure' (chapter 12) have been published before only in German, while the article on 'Liberalism' (chapter 9) was written in English to be published in an Italian translation in the *Enciclopedia del Movimento* by the Istituto della Enciclopedia Italiana at Rome. To them as well as to all the other publishers of the original versions named in the footnotes at the beginning of each chapter I am greatly indebted for permission to reprint.

Freiburg i.B.
April 1977

F. A. HAYEK

PART ONE

Philosophy

CHAPTER ONE

*The Errors of Constructivism**

I

It seemed to me necessary to introduce the term 'constructivism'¹ as a specific name for a manner of thinking that in the past has often, but misleadingly, been described as 'rationalism'.² The basic conception of this constructivism can perhaps be expressed in the simplest manner by the innocent sounding formula that, since man has himself created the institutions of society and civilisation, he must also be able to alter them at will so as to satisfy his desires or wishes. It is almost 50 years since I first heard and was greatly impressed by this formula.³

At first the current phrase that man 'created' his civilisation and its institutions may appear rather harmless and commonplace. But as soon as it is extended, as is frequently done, to mean that man was able to do this because he was endowed with reason, the implications become questionable. Man did not possess reason before civilisation.

* An inaugural lecture delivered on 27 January 1970 on the assumption of a visiting professorship at the Paris-Lodron University of Salzburg and originally published as *Die Irrtümer des Konstruktivismus und die Grundlagen legitimer Kritik gesellschaftlicher Gebilde*, Munich, 1970, reprinted Tübingen, 1975. The first two paragraphs referring solely to local circumstances have been omitted from this translation.

¹ See my Tokyo lecture of 1964 on 'Kinds of rationalism' in *Studies in Philosophy, Politics and Economics*, London and Chicago, 1967.

² I have come across occasional references to the fact that the adjective 'constructivist' was a favourite term of W. E. Gladstone, but I have not succeeded in finding it in his published works. More recently it has also been used to describe a movement in art where its meaning is not unrelated to the concept here discussed. See Stephen Bann, *The Tradition of Constructivism*, London, 1974. Perhaps, to show that we use the term in a critical sense, 'constructivist' is better than 'constructivism'.

³ In a lecture by W. C. Mitchell at Columbia University in New York during the year 1923. If I had even then some reservations about this statement it was mainly due to the discussion of the effects of 'non-reflected action' in Carl Menninger, *Untersuchungen über die Methoden der Sozialwissenschaften und der politischen Ökonomie insbesondere*, Leipzig, 1883.

The two evolved together. We need merely to consider language, which today nobody still believes to have been 'invented' by a rational being, in order to see that reason and civilisation develop in constant mutual interaction. But what we now no longer question with regard to language (though even that is comparatively recent) is by no means generally accepted with regard to morals, law, the skills of handicrafts, or social institutions. We are still too easily led to assume that these phenomena, which are clearly the results of human action, must also have been consciously designed by a human mind, in circumstances created for the purposes which they serve – that is, that they are what Max Weber called *wert-rationale* products.⁴ In short, we are misled into thinking that morals, law, skills and social institutions can only be justified in so far as they correspond to some preconceived design.

It is significant that this is a mistake we usually commit only with regard to the phenomena of our own civilisation. If the ethnologist or social anthropologist attempts to understand other cultures, he has no doubt that their members frequently have no idea as to the reason for observing particular rules, or what depends on it. Yet most modern social theorists are rarely willing to admit that the same thing applies also to our own civilisation. We too frequently do not know what benefits we derive from the usages of our society; and such social theorists regard this merely as a regrettable deficiency which ought to be removed as soon as possible.

2

In a short lecture it is not possible to trace the history of the discussion of these problems to which I have given some attention in recent years.⁵ I will merely mention that they were already familiar to the ancient Greeks. The very dichotomy between 'natural' and 'artificial' formations which the ancient Greeks introduced has dominated the discussion for 2,000 years. Unfortunately, the Greeks' distinction between natural and artificial has become the greatest obstacle to further advance; because, interpreted as an exclusive alternative,

⁴ See Max Weber, *Wirtschaft und Gesellschaft*, Tübingen, 1921, chapter 1, paragraph 2, where we get little help, however, since the 'values' to which the discussion refers are soon in effect reduced to consciously pursued particular aims.

⁵ See particularly my essays on 'The results of human action but not of human design' and 'The legal philosophy of David Hume' in *Studies on Philosophy, Politics and Economics*, and my lecture on 'Dr Bernard Mandeville', published in this book, p. 249.

[4]

this distinction is not only ambiguous but definitely false. As was at last clearly seen by the Scottish social philosophers of the eighteenth century (but the late Schoolmen had already partly seen it), a large part of social formations, although the result of human action, is not of human design. The consequence of this is that such formations, according to the interpretation of the traditional terms, could be described either as 'natural', or as 'artificial'.

The beginning of a true appreciation of these circumstances in the sixteenth century was extinguished, however, in the seventeenth century by the rise of a powerful new philosophy – the rationalism of René Descartes and his followers, from whom all modern forms of constructivism derive. From Descartes it was taken over by that unreasonable 'Age of Reason', which was entirely dominated by the Cartesian spirit. Voltaire, the greatest representative of the so-called 'Age of Reason', expressed the Cartesian spirit in his famous statement: 'if you want good laws, burn those you have and make yourselves new ones'.⁶ Against this, the great critic of rationalism, David Hume, could only slowly elaborate the foundations of a true theory of the growth of social formations, which was further developed by his fellow Scotsmen, Adam Smith and Adam Ferguson, into a theory of phenomena that are 'the result of human action but not of human design'.

Descartes had taught that we should only believe what we can prove. Applied to the field of morals and values generally, his doctrine meant that we should only accept as binding what we could recognise as a rational design for a recognisable purpose. I will leave undecided how far he himself evaded difficulties by representing the unfathomable will of God as the creator of all purposive phenomena.⁷ For his successors it certainly became a human will, which they regarded as the source of all social formations whose intention must provide the justification. Society appeared to them as a deliberate

⁶ Voltaire, *Dictionnaire philosophique*, s.v. 'Loi', reprinted in *Œuvres philosophiques de Voltaire*, ed. Hachette, Paris, n.d., XVIII, p. 432.

⁷ Descartes was somewhat reticent about his views on political and moral problems and only rarely explicitly stated the consequence of his philosophical principles for these questions. But compare the famous passage at the beginning of the second part of *Discours de la méthode* where he writes: 'Je crois que, si Sparte a été autrefois très florissante, ce n'a pas été à cause de la bonté de chacune de ses lois en particulier, mais que plusieurs étaient fort étrange et même contraire à bonnes mœurs; mais à cause que, n'ayant été inventée que par un seul, elles tendaient toutes à même fin'. The consequences of the Cartesian philosophy for morals are well shown in Alfred Espinas, *Descartes et la Morale*, Paris, 1925.

[5]

construction of men for an intended purpose – shown most clearly in the writing of Descartes' faithful pupil, J.-J. Rousseau.⁸ The belief in the unlimited power of a supreme authority as necessary, especially for a representative assembly, and therefore the belief that democracy necessarily means the unlimited power of the majority, are ominous consequences of this constructivism.

3

You will probably most clearly see what I mean by 'constructivism' if I quote a characteristic statement of a well-known Swedish sociologist, which I recently encountered in the pages of a German popular science journal. 'The most important goal that sociology has set itself', he wrote, 'is to predict the future development and to shape (*gestalten*) the future, or, if one prefers to express it in that manner, to create the future of mankind.'⁹ If a science makes such claims, this evidently implies the assertion that the whole of human civilisation, and all we have so far achieved, could only have been built as a purposive rational construction.

It must suffice for the moment to show that this constructivist interpretation of social formations is by no means merely harmless philosophical speculation, but an assertion of fact from which conclusions are derived concerning both the explanation of social processes and the opportunities for political action. The factually erroneous assertion, from which the constructivists derive such far-reaching consequences and demands, appears to me to be that the complex order of our modern society is exclusively due to the circumstance that men have been guided in their actions by foresight – an insight into the connections between cause and effect – or at least that it could have arisen through design. What I want to show is that

⁸ Cf. R. Derrahé, *Le Rationalisme de J.-J. Rousseau*, Paris, 1925.

⁹ Torngny T. Segerstedt, 'Wandel der Gesellschaft', *Bild der Wissenschaft*, vol. VI, no. 5, May 1969, p. 441. See also the same author's *Gesellschaftliche Herrschaft als soziologisches Konzept*, Neuwied and Berlin, 1967. Earlier examples of the constantly recurring idea of mankind or reason determining itself, particularly by L. T. Hobhouse and Karl Mannheim, I have given on an earlier occasion (*The Counter-Revolution of Science*, Chicago, 1952), but I had not expected to find the explicit assertion by a representative of this view such as the psychologist B. F. Skinner ('Freedom and the control of men', *The American Scholar*, vol. XXVI, no. 1, 1955-6, p. 49) that 'Man is able, and now as never before, to lift himself up by his own bootstraps'. The reader will find that the same idea appears also in a statement of the psychiatrist G. B. Chisholm, to be quoted later.

[6]

men are in their conduct *never* guided *exclusively* by their understanding of the causal connections between particular known means and certain desired ends, but always also by rules of conduct of which they are rarely aware, which they certainly have not consciously invented, and that to discern the function and significance of this is a difficult and only partially achieved task of scientific effort. Expressing this differently – it means that the success of rational striving (Max Weber's *zweckrationales Handeln*) is largely due to the observance of values, whose role in our society ought to be carefully distinguished from that of deliberately pursued goals.

I can only briefly mention the further fact, that success of the individual in the achievement of his immediate aims depends, not only on his conscious insight into causal connections, but also in a high degree on his ability to act according to rules, which he may be unable to express in words, but which we can only describe by formulating rules. All our skills, from the command of language to the mastery of handicrafts or games – actions which we 'know how' to perform without being able to state how we do it – are instances of this.¹⁰ I mention them here only because action according to rules – which we do not explicitly know and which have not been designed by reason, but prevail because the manner of acting of those who are successful is imitated – is perhaps easier to recognise in these instances than in the field directly relevant to my present concerns.

The rules we are discussing are those that are not so much useful to the individuals who observe them, as those that (if they are *generally* observed) make all the members of the group more effective, because they give them opportunities to act within a social *order*. These rules are also mostly not the result of a deliberate choice of means for specific purposes, but of a process of selection, in the course of which groups that achieved a more efficient order displaced (or were imitated by) others, often without knowing to what their superiority was due. This social group of rules includes the rules of law, of morals, of custom and so on – in fact, all the values which govern a society. The term 'value', which I shall for lack of a better one have to continue to use in this context, is in fact a little misleading, because we tend to interpret it as referring to particular aims of individual action, while in the fields to which I am referring

¹⁰ See my essay on 'Rules, perception and intelligibility' in *Studies in Philosophy, Politics and Economics*.

[7]

they consist mostly of rules which do not tell us positively what to do, but in most instances merely what we ought not to do.

Those taboos of society which are not founded on any rational justification have been the favourite subject of derision by the constructivists, who wish to see them banned from any rationally designed order of society. Among the taboos they have largely succeeded in destroying are respect for private property and for the keeping of private contracts, with the result that some people doubt if respect for them can ever again be restored.¹¹

For all organisms, however, it is often more important to know what they must not do, if they are to avoid danger, than to know what they must do in order to achieve particular ends. The former kind of knowledge is usually not a knowledge of the consequences which the prohibited kind of conduct would produce, but a knowledge that in certain conditions certain types of conduct are to be avoided. Our positive knowledge of cause and effect assists us only in those fields where our acquaintance with the particular circumstances is sufficient; and it is important that we do not move beyond the region where this knowledge will guide us reliably. This is achieved by rules that, without regard to the consequences in the particular instance, generally prohibit actions of a certain kind.¹²

That in this sense man is not only a purpose-seeking but also a rule-following animal has been repeatedly stressed in the recent literature.¹³ In order to understand what is meant by this, we must be quite clear about the meaning attached in this connection to the word 'rule'. This is necessary because those chiefly negative (or prohibitory) rules of conduct which make possible the formation of social order are of three different kinds, which I now spell out. These kinds of rules are: (1) rules that are merely observed in fact but have never been stated in words; if we speak of the 'sense of justice' or 'the feeling for language' we refer to such rules which we are able to apply, but do not know explicitly; (2) rules that, though they

¹¹ Cf., for example, Gunnar Myrdal, *Beyond the Welfare State*, London, 1969, p. 17: 'The important property and contract taboos, so basic for a stable liberal society, were forcibly weakened when big alterations were allowed to occur in the real value of currencies'; and *ibid.*, p. 19: 'Social taboos can never be established by decisions founded upon reflection and discussion'.

¹² I have treated these problems more extensively in my lecture on 'Rechtsordnung und Handlungsnormung' in E. Streisler (ed.), *Zur Einheit der Rechts- und Staatswissenschaften*, Karlsruhe, 1967; reprinted in my *Freiburger Studien*, Tübingen, 1969, as well as in my *Law, Legislation and Liberty*, vol. I, *Rules and Order*, London and Chicago, 1973.

¹³ R. S. Peters, *The Concept of Motivation*, London, 1958, p. 5.

[8]

have been stated in words, still merely express approximately what has long before been generally observed in action; and (3) rules that have been deliberately introduced and therefore necessarily exist as words set out in sentences.

Constructivists would like to reject the first and second groups of rules, and to accept as valid only the third group I have mentioned.

4

What then is the origin of those rules that most people follow but few if anyone can state in words? Long before Charles Darwin the theorists of society, and particularly those of language, had given the answer that in the process of cultural transmission, in which modes of conduct are passed on from generation to generation, a process of selection takes place, in which those modes of conduct prevail which lead to the formation of a more efficient order for the whole group, because such groups will prevail over others.¹⁴

A point needing special emphasis, because it is so frequently misunderstood, is that by no means every regularity of conduct among individuals produces an order for the whole of society. Therefore regular individual conduct does not necessarily mean order, but only certain kinds of regularity of the conduct of individuals lead to an order for the whole. The order of society is therefore a factual state of affairs which must be distinguished from the regularity of the conduct of individuals. It must be defined as a condition in which individuals are able, on the basis of their own respective peculiar knowledge, to form expectations concerning the conduct of others, which are proved correct by making possible a successful mutual adjustment of the actions of these individuals. If every person perceiving another were either to try to kill him or to run away, this would certainly also constitute a regularity of individual conduct, but not one that led to the formation of ordered groups. Quite clearly, certain combinations of such rules of individual conduct may produce a superior kind of order, which will enable some groups to expand at the expense of others.

This effect does not presuppose that the members of the group know to which rules of conduct the group owes its superiority, but

¹⁴ See on these 'Darwinians before Darwin' in the social sciences my essays 'The results of human action but not of human design' and 'The legal philosophy of David Hume' in *Studies in Philosophy, Politics and Economics*.

[9]

merely that it will accept only those individuals as members who observe the rules traditionally accepted by it. There will always be an amount of experience of individuals precipitated in such rules, which its living members do not know, but which nevertheless help them more effectively to pursue their ends.

This sort of 'knowledge of the world' that is passed on from generation to generation will thus consist in a great measure not of knowledge of cause and effect, but of rules of conduct adapted to the environment and acting like information about the environment although they do not say anything about it. Like scientific theories, they are preserved by proving themselves useful, but, in contrast to scientific theories, by a proof which no one needs to know, because the proof manifests itself in the resilience and progressive expansion of the order of society which it makes possible. This is the true content of the much derided idea of the 'wisdom of our ancestors' embodied in inherited institutions, which plays such an important role in conservative thought, but appears to the constructivist to be an empty phrase signifying nothing.

5

Time allows me to consider further only one of the many interesting interrelations of this kind, which at the same time also explains why an economist is particularly inclined to concern himself with these problems: the connection between rules of law and the spontaneously formed order of the market.¹⁵ This order is, of course, not the result of a miracle or some natural harmony of interests. It forms itself, because in the course of millennia men develop rules of conduct which lead to the formation of such an order out of the separate spontaneous activities of individuals. The interesting point about this is that men developed these rules without really understanding their functions. Philosophers of law have in general even ceased to ask what is the 'purpose' of law, thinking the question is unanswerable because they interpret 'purpose' to mean particular foreseeable results, to achieve which the rules were designed. In fact, this 'purpose' is to bring about an abstract order – a system of abstract relations – concrete manifestations of which will depend on a great variety of particular circumstances which no one can know in their entirety. Those rules of just conduct have therefore a 'meaning' or

¹⁵ Cf. my lecture 'Rechtsordnung und Handelsordnung', cited above in note 12.

[10]

'function' which no one has given them, and which social theory must try to discover.

It was the great achievement of economic theory that, 200 years before cybernetics, it recognised the nature of such self-regulating systems in which certain regularities (or, perhaps better, 'restraints') of conduct of the elements led to constant adaptation of the comprehensive order to particular facts, affecting in the first instance only the separate elements. Such an order, leading to the utilisation of much more information than anyone possesses, could not have been 'invented'. This follows from the fact that the result could not have been foreseen. None of our ancestors could have known that the protection of property and contracts would lead to an extensive division of labour, specialisation and the establishment of markets, or that the extension to outsiders of rules initially applicable only to members of the same tribe would tend towards the formation of a world economy.

All that man could do was to try to improve bit by bit on a process of mutually adjusting individual activities, by reducing conflicts through modifications to some of the inherited rules. All that he could deliberately design, he could and did create only within a system of rules, which he had not invented, and with the aim of improving an existing order.¹⁶ Always merely adjusting the rules, he tried to improve the combined effect of all other rules accepted in his community. In his efforts to improve the existing order, he was therefore never free arbitrarily to lay down any new rule he liked, but had always a definite problem to solve, raised by an imperfection of the existing order, but of an order he would have been quite incapable of constructing as a whole. What man found were conflicts between accepted values, the significance of which he only partly understood, but on the character of which the results of many of his efforts depended, and which he could only strive better to adapt to each other, but which he could never create anew.

¹⁶ Cf. in this connection K. R. Popper, *The Open Society and Its Enemies*, Princeton, N.J., 1969, vol. I, p. 64: "Nearly all misunderstandings [of the statement that norms are man-made] can be traced back to one fundamental misconception, namely to the belief that "convention" implied arbitrariness"; also David Hume, *A Treatise on Human Nature*, in *Works*, ed. T. H. Green and T. H. Grose, London, 1890, vol. II, p. 258: "Though the rules of justice be artificial, they are not arbitrary. Nor is the expression improper to call them *Laws of Nature*; if by natural we understand what is common to any species, or even if we confine it to mean what is inseparable from the species."

[11]

The most surprising aspect of recent developments is that our undeniably increased understanding of these circumstances has led to new errors. We believe, I think rightly, that we have learnt to understand the general principles which govern the formation of such complex orders as those of organisms, human society, or perhaps even the human mind. Experience in those fields in which modern science has achieved its greatest triumphs leads us to expect that such insights will rapidly also give us mastery over the phenomena, and enable us deliberately to determine the results. But in the sphere of the complex phenomena of life, of the mind, and of the society, we encounter a new difficulty.¹⁷ However greatly our theories and techniques of investigation assist us to interpret the observed facts, they give little help in ascertaining all those particulars which enter into the determination of the complex patterns, and which we would have to know to achieve complete explanations, or precise predictions.

If we knew all the particular circumstances which prevailed in the course of the history of the earth (and if it were not for the phenomenon of genetic drift) we should be able with the help of modern genetics to explain why different species of organisms have assumed the specific structures which they possess. But it would be absurd to assume that we could ever ascertain all these particular facts. It may even be true that if at a given moment someone could know the sum total of all the particular facts which are dispersed among the millions or billions of people living at the time, he ought to be in a position to bring about a more efficient order of human productive efforts than that achieved by the market. Science can help us to a better theoretical understanding of the interconnections. But science cannot significantly help us to ascertain all the widely dispersed and rapidly fluctuating particular circumstances of time and place which determine the order of a great complex society.

The delusion that advancing theoretical knowledge places us everywhere increasingly in a position to reduce complex interconnections to ascertainable particular facts often leads to new scientific errors. Especially it leads to those errors of science which we must now consider, because they lead to the destruction of irreplace-

¹⁷ Cf. my essay on 'The theory of complex phenomena' in *Studies in Philosophy, Politics and Economics*.

[12]

able values, to which we owe our social order and our civilisation. Such errors are largely due to an arrogation of pretended knowledge, which in fact no one possesses and which even the advance of science is not likely to give us.

Concerning our modern economic system, understanding of the principles by which its order forms itself shows us that it rests on the use of knowledge (and of skills in obtaining relevant information) which no one possesses in its entirety, and that it is brought about because individuals are in their actions guided by certain general rules. Certainly, we ought not to succumb to the false belief, or delusion, that we can replace it with a different kind of order, which presupposes that all this knowledge can be concentrated in a central brain, or group of brains of any practicable size.

The fact, however, that in spite of all the advance of our knowledge, the results of our endeavours remain dependent on circumstances about which we know little or nothing, and on ordering forces we cannot control, is precisely what so many people regard as intolerable. Constructivists ascribe this interdependence to still allowing ourselves to be guided by values which are not rationally demonstrated or given positive proof as justification for them. They assert that we no longer need to entrust our fate to a system, the results of which we do not determine beforehand, although it opens up vast new opportunities for the efforts of individuals, but at the same time resembles a game of chance in some respects, since no single person bears responsibility for the ultimate outcome. The anthropomorphic hypostasation of a personified mankind, who pursue aims they have consciously chosen, thus leads to the demand that all those grown values not visibly serving approved ends, but which are conditions for the formation of an abstract order, should be discarded to offer individuals improved prospects of achieving their different and often conflicting goals. Scientific error of this kind tends to discredit values, on the observance of which the survival of our civilisation may depend.

7

This process of scientific error destroying indispensable values commenced to play an important role during the last century. It is specially associated with various philosophical views, which their authors like to describe as 'positivist', because they wish to recognise

[13]

as useful knowledge only insights into the connection between cause and effect. The very name – *positus* meaning ‘set down’ – expresses the preference for the deliberately created over all that has not been rationally designed. The founder of the positivist movement, Auguste Comte, clearly expressed this basic idea when he asserted the unquestionable superiority of demonstrated over revealed morals.¹⁸ The phrase shows that the only choice he recognised was that between deliberate creation by a human mind and creation by a superhuman intelligence, and that he did not even consider the possibility of any origins from a process of selective evolution. The most important later manifestation of this constructivism in the course of the nineteenth century was utilitarianism, the treatment of all norms in epistemological positivism in general, and legal positivism in particular; and finally, I believe, the whole of socialism.

In the case of utilitarianism, this character is clearly shown in its original, particularistic form, now generally distinguished as ‘act utilitarianism’ from ‘rule utilitarianism’. This alone is faithful to the original idea that every single decision must be based on the perceived social utility of its particular effects; while a generic or rule utilitarianism, as has often been shown, cannot be consistently carried through.¹⁹ Side by side with these attempts at constructivist explanation we find in philosophical positivism, however, also a tendency to dispose of all values as things which do not refer to facts (and, therefore, are ‘metaphysical’) or a tendency to treat them as pure matters of emotion and therefore rationally not justifiable, or meaningless. The most naive version of this is probably the ‘emotivism’ that has been popular in the course of the last 30 years. The expounders of ‘emotivism’²⁰ believed that, with the statement that moral or immoral, or just and unjust, action evokes certain moral feelings, they had explained something – as if the question, why a certain group of actions causes one kind of emotion, and another group of actions another kind of emotion, did not raise an important problem of the significance this has for the ordering of life in society.

¹⁸ Auguste Comte, *Systeme de la politique positive*, Paris, 1854, vol. I, p. 356: ‘La supériorité de la moral démontrée sur la moral révélée!’

¹⁹ Concerning the results of the more recent discussion of utilitarianism see David Lyons, *Forms and Limits of Utilitarianism*, Oxford, 1965; D. H. Hodgson, *Consequences of Utilitarianism*, Oxford, 1967; and the convenient collection of essays in M. D. Bayles (ed.), *Contemporary Utilitarianism*, New York, 1968.

²⁰ See the writings of Rudolf Carnap, and particularly A. J. Ayer, *Language, Truth and Logic*, London, 1936.

[14]

The constructivist approach is most clearly to be seen in the original form of legal positivism, as expounded by Thomas Hobbes and John Austin, to whom every rule of law must be derivable from a conscious act of legislation. This, as every historian of law knows, is factually false. But even in its most modern form, which I will briefly consider later, this false assumption is avoided only by limiting the conscious act of creating law to the conferring of validity on rules, about the origin of the content of which it has nothing to say. This turns the whole theory into an uninteresting tautology, which tells us nothing about how the rules can be found which the judicial authorities must apply.

The roots of socialism in constructivist thought are obvious not only in its original form – in which it intended through socialisation of the means of production, distribution and exchange to make possible a planned economy to replace the spontaneous order of the market by an organisation directed to particular ends.²¹ But the modern form of socialism that tries to use the market in the service of what is called ‘social justice’, and for this purpose wants to guide the action of men, not by rules of just conduct for the individual, but by the recognised importance of results brought about by the decisions of authority, is no less based upon it.

8

In our century constructivism has in particular exercised great influence on ethical views through its effects on psychiatry and psychology. Within the time at my disposal I can give only two of many examples of that destruction of values by scientific error, which is at work in these fields. With regard to the first example, which I

²¹ The recognition of the defects of these plans is now generally and justly ascribed to the great discussion which was started in the 1920s by the writings of Ludwig von Mises. But we should not overlook how many of the important points had been clearly seen earlier by some economists. As one forgotten instance a statement by Erwin Nasse in an article ‘Über die Verhütung der Produktionskrisen durch staatliche Fürsorge’, *Jahrbuch für Gesetzgebung etc.*, N.S., 1879, p. 164, may be quoted: ‘Eine planmäßige Leitung der Produktion ohne Freiheit der Bedarfs- und Berufswahl würde nicht geraderu undenkbar, aber mit einer Zerstörung alles dessen, was das Leben lebenswert macht, verbunden sein. Eine planmäßige Leitung der gesamten wirtschaftlichen Tätigkeit mit Freiheit der Bedarfs- und Berufswahl zu vereinigen ist ein Problem, das nur mit der Quadratur des Kreises verglichen werden kann. Denn, so wie man jeden gestattet, die Richtung und Art seiner wirtschaftlichen Tätigkeit und Konsumtion frei zu bestimmen, verliert man die Leitung der Gesamtwirtschaft aus der Hand.’

[15]

take from a psychiatrist, I must first say a few words about the author I shall quote, lest it be suspected that in order to exaggerate I have chosen some unrepresentative figure. The international reputation of the Canadian scientist, the late Brock Chisholm, is illustrated by the fact that he had been entrusted with building up the World Health Organisation, acted for five years as its first Secretary-General and was finally elected President of the World Federation of Mental Health.

Just before Brock Chisholm embarked on this international career he wrote:²²

The re-interpretation and eventual eradication of the concept of right and wrong which has been the basis of child training, the substitution of intelligent and rational thinking for faith in the certainties of the old people, these are the belated objectives of practically all effective psychotherapy. . . . The suggestion that we should stop teaching children moralities and right and wrong and instead protect their original intellectual integrity has of course to be met by an outcry of heretic or iconoclast, such as was raised against Galileo for finding another planet,

²² George Brock Chisholm, 'The re-establishment of peacetime society', The William Alanson White Memorial Lectures, 2nd series, *Psychiatry*, vol. IX, no. 3, February 1946 (with a laudatory introduction by Abe Fortas), pp. 9-11. Cf. also two books by Chisholm, *Prescription for Survival*, New York, 1957, and *Can People Learn to Learn?*, New York, 1958, as well as his essay 'The issues concerning man's biological future' in *The Great Issues of Conscience in Modern Medicine*, Hanover, N.H., 1960, where he argues (p. 61): 'We haven't even got a government department that I know of that is set up to concern itself with the "survival of the human race". And if there is any question about which we have no government department, it obviously is not very important.'

It would be possible to quote here any number of similar utterances of the last 150 years. The Russian revolutionary Alexander Herzen was able to write: 'You want a book of rules, while I think that when one reaches a certain age, one ought to be ashamed of having to use one, and the truly free man creates his own morality' (Alexander Herzen, *From the Other Shore*, ed. I. Berlin, London, 1956, pp. 28 and 141); this is little different from the views of a contemporary logical positivist such as Hans Reichenbach who argues in *The Rise of Scientific Philosophy*, Berkeley, Calif., 1949, p. 141 that 'the power of reason must be sought not in rules that reason dictates to our imagination, but in the ability to free ourselves from any kind of rules to which we have been conditioned through experience and tradition'. The statement by J. M. Keynes, *Two Memoirs*, London, 1949, p. 97, which on earlier occasions I have quoted in this connection, appears to me to have largely lost its significance in the context since Michael Holdroyd in *Lytton Strachey, a Critical Biography*, London, 1967 and 1968, has shown that the majority of the members of the group about which Keynes spoke, including himself, were homosexual, which is probably a sufficient explanation of their revolt against ruling morals.

and against the truth of evolution, and against Christ's interpretation of the Hebrew Gods, and against any attempt to change the mistaken old ways and ideas. The pretence is made, as it has been made in relation to the finding of any extension of truth, that to do away with right and wrong would produce uncivilized people, immorality, lawlessness and social chaos. The fact is that most psychiatrists and psychologists and many other respectable people have escaped from these moral chains and are able to observe and think freely. . . . If the race is to be freed from its crippling burden of good and evil it must be psychiatrists who take the original responsibility. This is a challenge which must be met. . . . With the other human sciences, psychiatry must now decide what is to be the immediate future of the human race. No one else can. And this is the prime responsibility of psychiatry.

It never seemed to occur to Chisholm that moral rules do not directly serve the satisfaction of individual desires, but are required to assist the functioning of an order; and even to tame some instincts, which man has inherited from his life in small groups where he passed most of his evolution. It may well be that the incorrigible barbarian in our midst resents these restraints. But are psychiatrists really the competent authorities to give us new morals?

Chisholm finally expresses the hope that two or three million trained psychiatrists, with the assistance of appropriate salesmanship, will soon succeed in freeing men from the 'perverse' concept of right and wrong. It sometimes seems as if they have already had too much success in this direction.

My second contemporary example of the destruction of values by scientific error is taken from jurisprudence. There is no need in this instance to identify the author of the statement I shall quote as belonging to the same category. It comes from no less a figure than my former teacher at the University of Vienna, Hans Kelsen. He assures us that 'justice is an irrational idea', and continues:²³

²³ Hans Kelsen, *What is Justice?*, Berkeley, Calif., 1957, p. 21; almost literally the same statement occurs in *General Theory of Law and State*, Cambridge, Mass., 1949, p. 13. The elimination from the law of the concept of justice was of course not a discovery of Kelsen but is common to the whole of legal positivism and is particularly characteristic of the German theorists of law around the turn of the century of whom Alfred von Martini, *Mensch und Gesellschaft*, Heide, Frankfurt a.M., 1965, p. 265, rightly says: 'In wilhelminischer Zeit machten schliesslich, wie Graf Harry Kessler in seinen *Continued overleaf*

from the point of view of rational cognition, there are only interests of human beings and hence conflicts of interest. The solution of these can be brought about either by satisfying one interest at the expense of the other, or by a compromise between the existing interests. It is not possible to prove that the one or the other solution is just.

Law is thus for Kelsen a deliberate construction, serving known particular interests. This might indeed be necessarily so, if we had ever to create anew the whole body of rules of just conduct. I will even concede to Kelsen that we can never positively prove what is just. But this does not preclude our ability to say when a rule is unjust, or that by the persistent application of such a negative test of injustice we may not be able progressively to approach justice.

It is true that this applies only to the rules of just conduct for individuals, and not to what Kelsen, like all socialists, had primarily in mind – namely, those aims of the deliberate measures employed by authority to achieve what is called ‘social justice’. Yet neither positive nor negative criteria of an objective kind exist, from which to define or test so-called ‘social justice’, which is one of the emptiest of all phrases.

The nineteenth-century ideal of liberty was based on the conviction that there were such objective general rules of just conduct; and the false assertion that justice is always merely a matter of particular interests has contributed a great deal to creating the belief that we have no choice but to assign to each individual what is regarded as right by those who for the time being hold the power.

9

Let me clearly state the consequences that seem to follow from what I have said about the principles for legitimate criticism of social formations. After laying the previous foundations, this can be done in comparatively few words. I must at once warn you, however, that

Erinnerungen berichtet, berühmte deutsche Rechtslehrer so etwas wie einen Sport daraus, bei jeder Gelegenheit zu betonen, dass Gerechtigkeit mathematisch nicht das Geringste mit Recht zu tun habe. Die Frucht war die Lehre von der entscheidenden rechtlichen Potenz der ‘Entscheidung’, der Derisionismus Carl Schmitts, des Kronjuristen der braunen Diktatur.’

A good account of the dissolution of German liberalism by legal positivism will be found in John H. Hallowell, *The Decline of Liberalism as an Ideology with Particular Reference to German Politico-Legal Thought*, Berkeley, Calif., 1943.

[18]

the conservatives among you, who up to this point may be rejoicing, will now probably be disappointed. The proper conclusion from the considerations I have advanced is by no means that we may confidently accept all the old and traditional values. Nor even that there are *any* values or moral principles, which science may not occasionally question. The social scientist who endeavours to understand how society functions, and to discover where it can be improved, must claim the right critically to examine, and even to judge, every *single* value of our society. The consequence of what I have said is merely that we can never at one and the same time question *all* its values. Such absolute doubt could lead only to the destruction of our civilisation and – in view of the numbers to which economic progress has allowed the human race to grow – to extreme misery and starvation. Complete abandonment of all traditional values is, of course, impossible; it would make man incapable of acting. If traditional and taught values formed by man in the course of the evolution of civilisation were renounced, this could only mean falling back on those instinctive values, which man developed in hundreds of thousands of years of tribal life, and which are now probably in a measure innate. These instinctive values are often irreconcilable with the basic principles of an open society – namely, the application of the same rules of just conduct to our relations with all other men – which our young revolutionaries also profess. The possibility of such a great society certainly does not rest on instincts, but on the governance of acquired rules. This is the discipline of reason.²⁴ It curbs instinctive impulses, and relies on rules of conduct which have originated in an interpersonal mental process. As the result of this process, in the course of time all the separate individual sets of values become slowly adapted to each other.

The process of the evolution of a system of values passed on by cultural transmission must implicitly rest on criticism of individual values in the light of their consistency, or compatibility, with all other values of society, which for this purpose must be taken as given and undoubted. The only standard by which we can judge particular values of our society is the entire body of other values of that same society. More precisely, the factually existing, but always

²⁴ The term reason is here used in the sense explained by John Locke, *Essays on the Law of Nature*, ed. W. von Leyden, Oxford, 1954, p. 111: ‘By reason, however, I do not think is meant here the faculty of the understanding which forms trains of thought and deduces proofs, but certain definite principles of action from which spring all virtues and whatever is necessary for the proper moulding of morals.’

[19]

imperfect, order of actions produced by obedience to these values provides the touchstone for evaluation. Because prevailing systems of morals or values do not always give unambiguous answers to the questions which arise, but often prove to be internally contradictory, we are forced to develop and refine such moral systems continuously. We shall sometimes be constrained to sacrifice some moral value, but always only to other moral values which we regard as superior. We cannot escape this choice, because it is part of an indispensable process. In the course of it we are certain to make many mistakes. Sometimes whole groups, and perhaps entire nations, will decline, because they chose the wrong values. Reason has to prove itself in this mutual adjustment of given values, and must perform its most important but very unpopular task – namely, to point out the inner contradictions of our thinking and feeling.

The picture of man as a being who, thanks to his reason, can rise above the values of his civilisation, in order to judge it from the outside, or from a higher point of view, is an illusion. It simply must be understood that reason itself is part of civilisation. All we can ever do is to confront one part with the other parts. Even this process leads to incessant movement, which may in the very long course of time change the whole. But sudden complete reconstruction of the whole is not possible at any stage of the process, because we must always use the material that is available, and which itself is the integrated product of a process of evolution.

I hope it has become sufficiently clear that it is not, as may sometimes appear, the progress of science which threatens our civilisation, but scientific error, based usually on the presumption of knowledge which in fact we do not possess. This lays upon science the responsibility to make good the harm its representatives have done. Growth of knowledge produces the insight that we can now aim at the goals which the present state of science has brought within our reach thanks only to the governance of values, which we have not made, and the significance of which we still only very imperfectly understand. So long as we cannot yet agree on crucial questions, such as whether a competitive market order is possible without the recognition of private several property in the instruments of production, it is clear that we still understand only very imperfectly the fundamental principles on which the existing order is based.

If scientists are so little aware of the responsibility they have incurred by failing to comprehend the role of values for the preserva-

[20]

tion of the social order, this is largely due to the notion that science as such has nothing to say about the validity of values. The *true* statement that, from our understanding of causal connections between facts alone, we can derive no conclusions about the validity of values, has been extended into the false belief that science has nothing to do with values.

This attitude should change immediately scientific analysis shows that the existing factual order of society exists only because people accept certain values. With regard to such a social system, we cannot even make statements about the effects of particular events without assuming that certain norms are being generally obeyed.²⁵ From such premises containing values it is perfectly possible to derive conclusions about the compatibility, or incompatibility, of the various values presupposed in an argument. It is therefore incorrect if, from the postulate that science ought to be free of values, the conclusion is drawn that within a given system problems of value cannot be rationally decided. When we have to deal with an ongoing process for the ordering of society, in which most of the governing values are unquestioned, there will often be only one certain answer to particular questions that is compatible with the rest of the system.²⁶

²⁵ Cf. in this connection the argument in H. A. L. Hart, *The Concept of Law*, Oxford, 1961, p. 188: 'Our concern is with social arrangements for continued existence, not with those of a suicide club. We wish to know whether, among these social arrangements, there are some which are illuminatingly ranked as natural laws discoverable by reason, and what their relation is to human law and morality. To raise this or any other question *how* men would live together, we must assume that their aim, generally speaking, is to live. From this point the argument is a simple one. Reflection on some very obvious generalisations – indeed truisms – concerning human nature and the world in which men live, show that as long as they hold good, there are certain rules of conduct which any social organisation must contain if it is to be viable.' Similar considerations of an anthropologist are to be found in S. F. Nadel, *Anthropology and Modern Life*, Ganberra, 1953, pp. 16–22.

²⁶ My position in this respect has become very much like that which Luigi Einaudi has well described in his introduction to a book by C. Brecciani-Turroni which I know only in its German translation, *Einflüßung in die Wirtschaftspolitik*, Bern, 1948, p. 13. He relates there how he used to believe that the economist had silently to accept the goals pursued by the legislator but had become increasingly doubtful about this, and might some day arrive at the conclusion that the economist ought to combine his task of a critic of the means with a similar critique of the ends, and that this may prove as much a part of science as the investigation of the means to which science at present confines itself. He adds that the study of the correspondence of means and ends and of the logical consistency of the posited ends may be much more difficult than, and certainly of equal moral value to, all considerations of the acceptability and evaluation of the separate ends.

[21]

We have the curious spectacle that frequently the very same scientists, who particularly emphasise the *wertfrei* (value free) character of science, use that science to discredit prevailing values as the expression of irrational emotions or particular material interests. Such scientists often give the impression that the only value judgment that is scientifically respectable is the view that our values have no value. This attitude is therefore the result of a defective understanding of the connection between accepted values and the prevailing factual order.²⁷ All that we can do – and must do – is to test each and every value about which doubts are raised by the standard of other values, which we can assume that our listeners or readers share with us. At present the postulate that we should avoid all value judgments seems to me often to have become a mere excuse of the timid, who do not wish to offend anyone and thus conceal their preferences. Even more frequently, it is an attempt to conceal from themselves rational comprehension of the choices we have to make between possibilities open to us, which force us to sacrifice some aims we wish also to realise.

One of the noblest tasks of social science, it seems to me, is to show up clearly these conflicts of values.

Thus it is possible to demonstrate that what depends on the acceptance of values, which do not appear as consciously pursued aims of individuals or groups, are the very foundations of the factual order, whose existence we presuppose in all our individual endeavours.

²⁷ A good illustration of what is said in the text is apparently offered by the lectures of Gunnar Myrdal on *Objectivity in Social Research* from which *The Times Literary Supplement* of 19 February 1970 quotes a definition of 'scientific objectivity' as the freeing of the student from '(1) the powerful heritage of earlier writings in his field of inquiry, ordinarily containing normative and teleological notions inherited from past generations and founded upon the metaphysical moral philosophies of natural law and utilitarianism from which all our social and economic theories have branched off; (2) the influence of the entire cultural, social, economic, and political milieu of the society where he lives, works and earns his living and his status; and (3) the influence stemming from his own personality as molded not only by traditions and environment but also by his individual history, constitution and inclinations.'

CHAPTER TWO

*The Pretence of Knowledge**

The particular occasion of this lecture, combined with the chief practical problem which economists have to face today, have made the choice of its topic almost inevitable. On the one hand the still recent establishment of the Nobel Memorial Prize in Economic Science marks a significant step in the process by which, in the opinion of the general public, economics has been conceded some of the dignity and prestige of the physical sciences. On the other hand, the economists are at this moment called upon to say how to extricate the free world from the serious threat of accelerating inflation which, it must be admitted, has been brought about by policies which the majority of economists recommended and even urged governments to pursue. We have indeed at the moment little cause for pride: as a profession we have made a mess of things.

It seems to me that this failure of the economists to guide policy more successfully is closely connected with their propensity to imitate as closely as possible the procedures of the brilliantly successful physical sciences – an attempt which in our field may lead to outright error. It is an approach which has come to be described as the 'scientistic' attitude – an attitude which, as I defined it some thirty years ago, 'is decidedly unscientific in the true sense of the word, since it involves a mechanical and uncritical application of habits of thought to fields different from those in which they have been formed'.¹ I want today to begin by explaining how some of the gravest errors of recent economic policy are a direct consequence of this scientistic error.

The theory which has been guiding monetary and financial policy

* Nobel Memorial Lecture, delivered at Stockholm, 11 December 1974, and reprinted from *Les Prix Nobel en 1974*, Stockholm, 1975.

¹ 'Scientism and the study of society', *Economica*, vol. IX, no. 35, August 1942, reprinted in *The Counter-Revolution of Science*, Chicago, 1952.

during the last thirty years, and which I contend is largely the product of such a mistaken conception of the proper scientific procedure, consists in the assertion that there exists a simple positive correlation between total employment and the size of the aggregate demand for goods and services; it leads to the belief that we can permanently assure full employment by maintaining total money expenditure at an appropriate level. Among the various theories advanced to account for extensive unemployment, this is probably the only one in support of which strong quantitative evidence can be adduced. I nevertheless regard it as fundamentally false, and to act upon it, as we now experience, as very harmful.

This brings me to the crucial issue. Unlike the position that exists in the physical sciences, in economics and other disciplines that deal with essentially complex phenomena, the aspects of the events to be accounted for about which we can get quantitative data are necessarily limited and may not include the important ones. While in the physical sciences it is generally assumed, probably with good reason, that any important factor which determines the observed events will itself be directly observable and measurable, in the study of such complex phenomena as the market, which depend on the actions of many individuals, all the circumstances which will determine the outcome of a process, for reasons which I shall explain later, will hardly ever be fully known or measurable. And while in the physical sciences the investigator will be able to measure what, on the basis of a *prima facie* theory, he thinks important, in the social sciences often that is treated as important which happens to be accessible to measurement. This is sometimes carried to the point where it is demanded that our theories must be formulated in such terms that they refer only to measurable magnitudes.

It can hardly be denied that such a demand quite arbitrarily limits the facts which are to be admitted as possible causes of the events which occur in the real world. This view, which is often quite naively accepted as required by scientific procedure, has some rather paradoxical consequences. We know, of course, with regard to the market and similar social structures, a great many facts to which we cannot measure and on which indeed we have only some very imprecise and general information. And because the effects of these facts in any particular instance cannot be confirmed by quantitative evidence, they are simply disregarded by those sworn to admit only what they regard as scientific evidence: they thereupon

[24]

happily proceed on the fiction that the factors which they can measure are the only ones that are relevant.

The correlation between aggregate demand and total employment, for instance, may only be approximate, but as it is the *only* one on which we have quantitative data, it is accepted as the only causal connection that counts. On this standard there may thus well exist better 'scientific' evidence for a false theory, which will be accepted because it is more 'scientific', than for a valid explanation, which is rejected because there is no sufficient quantitative evidence for it.

Let me illustrate this by a brief sketch of what I regard as the chief actual cause of extensive unemployment – an account which will also explain why such unemployment cannot be lastingly cured by the inflationary policies recommended by the now fashionable theory. This correct explanation appears to me to be the existence of discrepancies between the distribution of demand among the different goods and services and the allocation of labour and other resources among the production of those outputs. We possess a fairly good 'qualitative' knowledge of the forces by which a correspondence between demand and supply in the different sectors of the economic system is brought about, of the conditions under which it will be achieved, and of the factors likely to prevent such an adjustment. The separate steps in the account of this process rely on facts of everyday experience, and few who take the trouble to follow the argument will question the validity of the factual assumptions, or the logical correctness of the conclusions drawn from them. We have indeed good reason to believe that unemployment indicates that the structure of relative prices and wages has been distorted (usually by monopolistic or governmental price fixing), and that in order to restore equality between the demand and the supply of labour in all sectors changes of relative prices and some transfers of labour will be necessary.

But when we are asked for quantitative evidence for the particular structure of prices and wages that would be required in order to assure a smooth continuous sale of the products and services offered, we must admit that we have no such information. We know, in other words, the general conditions in which what we call, somewhat misleadingly, an equilibrium will establish itself: but we never know what the particular prices or wages are which would exist if the market were to bring about such an equilibrium. We can merely say what the conditions are in which we can expect the market to

Bns

[25]

establish prices and wages at which demand will equal supply. But we can never produce statistical information which would show how much the prevailing prices and wages *deviate* from those which would secure a continuous sale of the current supply of labour. Though this account of the causes of unemployment is an empirical theory, in the sense that it might be proved false, for example if, with a constant money supply, a general increase of wages did not lead to unemployment, it is certainly not the kind of theory which we could use to obtain specific numerical predictions concerning the rates of wages, or the distribution of labour, to be expected.

Why should we, however, in economics, have to plead ignorance of the sort of facts on which, in the case of a physical theory, a scientist would certainly be expected to give precise information? It is probably not surprising that those impressed by the example of the physical sciences should find this position very unsatisfactory and should insist on the standards of proof which they find there. The reason for this state of affairs is the fact, to which I have already briefly referred, that the social sciences, like much of biology but unlike most fields of the physical sciences, have to deal with structures of *essential* complexity, i.e. with structures whose characteristic properties can be exhibited only by models made up of relatively large numbers of variables. Competition, for instance, is a process which will produce certain results only if it proceeds among a fairly large number of acting persons.

In some fields, particularly where problems of a similar kind arise in the physical sciences, the difficulties can be overcome by using, instead of specific information about the individual elements, data about the relative frequency, or the probability, of the occurrence of the various distinctive properties of the elements. But this is true only where we have to deal with what has been called by Dr Warren Weaver (formerly of the Rockefeller Foundation), with a distinction which ought to be much more widely understood, 'phenomena of unorganized complexity', in contrast to those 'phenomena of organized complexity' with which we have to deal in the social sciences.² Organized complexity here means that the character of the structures showing it depends not only on the properties of the individual elements of which they are composed, and the relative frequency with which they occur, but also on the manner

² Warren Weaver, 'A quarter century in the natural sciences', *The Rockefeller Foundation Annual Report 1958*, chapter I, 'Science and complexity'.

[26]

in which the individual elements are connected with each other. In the explanation of the working of such structures we can for this reason not replace the information about the individual elements by statistical information, but require full information about each element if from our theory we are to derive specific predictions about individual events. Without such specific information about the individual elements we shall be confined to what on another occasion I have called mere pattern predictions – predictions of some of the general attributes of the structures that will form themselves, but not containing specific statements about the individual elements of which the structures will be made up.³

This is particularly true of our theories accounting for the determination of the systems of relative prices and wages that will form themselves on a well-functioning market. Into the determination of these prices and wages there will enter the effects of particular information possessed by every one of the participants in the market process – a sum of facts which in their totality cannot be known to the scientific observer, or to any other single brain. It is indeed the source of the superiority of the market order, and the reason why, when it is not suppressed by the powers of government, it regularly displaces other types of order, that in the resulting allocation of resources more of the knowledge of particular facts will be utilized which exists only dispersed among uncounted persons, than any one person can possess. But because we, the observing scientists, can thus never know all the determinants of such an order, and in consequence also cannot know at which particular structure of prices and wages demand would everywhere equal supply, we also cannot measure the deviations from that order; nor can we statistically test our theory that it is the deviations from that 'equilibrium' system of prices and wages which make it impossible to sell some of the products and services at the prices at which they are offered.

Before I continue with my immediate concern, the effects of all this on the employment policies currently pursued, allow me to define more specifically the inherent limitations of our numerical knowledge which are so often overlooked. I want to do this to avoid giving the impression that I generally reject the mathematical

³ See my essay 'The theory of complex phenomena' in *The Critical Approach to Science and Philosophy. Essays in Honor of K. R. Popper*, ed. M. Bunge, New York, 1964, and reprinted (with additions) in my *Studies in Philosophy, Politics and Economics*, London and Chicago, 1967.

[27]