Popper's Views on Natural and Social Science
by Colin Scrimgeour

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18. PIECEMEAL PLANNING

It is noticeable, on the other hand, that a large part of the best work on Money is topical. It has been prompted by particular episodes, by particular experiences of the writer's own time.

John Hicks

In his critique of historicism Popper distinguished between two types of prediction. One he called 'prophecy', such predictions of future events as are made by astronomers or meteorologists and to which historicists have vainly aspired for social events. The other he called 'technological prediction', which derives from other branches of physics to serve engineering purposes; e.g. the prediction of a rocket's escape velocity and of the energy needed to achieve it. As historical prophecy cannot have any scientific basis, for reasons noted in § 16, Popper advocates 'social engineering' as the practical aim of social science, —the shaping or creation of social institutions in order to achieve or promote desired improvements to social conditions.

He has also distinguished between two types of social engineering, 'holistic', utopian or collectivist planning, of which, as we have seen, he strongly disapproves, and 'piecemeal' planning, of which he strongly approves. The one attempts the impossible task of remoulding society in accordance with a complete social blueprint, the other attempts in any time only as many reforms as can be properly monitored and as do not impair democratic institutions. Democracy is incompatible with holistic social engineering, but is necessary for piecemeal social engineering if only to give adequate information about the ways in which experimental reforms are working out in regard to their effects on people.[1]

Piecemeal social engineering is, perhaps, not an attractive term, any more than genetic engineering is, because both have a flavour of physical manipulations. But something is needed to label those 'social activities, private as well as public, which, in order to realize some aim or end, consciously utilize all available technological knowledge including, if it can be obtained, knowledge concerning the limitations of knowledge'[2]. This knowledge is used to run, reconstruct or design social institutions of both a private and a public character, recognizing that most of them have evolved largely as the undesigned result of human actions, but regarding them from a functional or instrumental viewpoint as means to certain ends—as machines rather than as organisms.

The ends may concern society as 'a whole', and relate to its general welfare, but the means must fall far short of redesigning it as a whole because they are to be carefully tested step by step in order to check for undesirable consequences and to learn from mistakes. It is important to avoid getting into a position where the scope and complexity of reforms make it impossible to disentangle causes from effects, and so to know what is really happening. If only from the standpoint of improving scientific knowledge, moreover, there should be full opportunity for critical discussion about reforms and the ways in which they are affecting society; this is particularly important if the reforms are designed to improve the general welfare. Democratic institutions, accordingly, are needed for scientific as well as for ethical reasons.

Popper agrees, therefore, with Marx and Engels in condemning utopian planning, and with Mises and Hayek in condemning collectivist planning. But he disagrees with the communists' view that piecemeal reform is impossible, citing from the *Communist Manifesto* ten of its points for post-revolutionary action and showing that these have been largely realized in democratic countries without the need for revolution or wholesale change; notably progressive income taxation, free education, centralization of credit, and nationalization of transport and communications[3]. The *Manifesto*, moreover, does not even mention the provisions for health and pensions which have become so large a part of state expenditures. He also disagrees with the Austrians' view that the remedy for social evils should be left as much as possible to market forces. Popper sets no limit either to state participation in piecemeal social engineering nor to the scope of this engineering, provided that it does not threaten democracy and that it satisfies his criteria of a trial and error procedure, together with free criticism of ends and means.

Both Popper and Hayek were socialists in their youthful days, Popper a Marxist and Hayek a Fabian. Popper ceased to be one when he saw through the dogmatism of Marxists and realized

[1] *The Poverty of Historicism*, Section 21.

[2] idem, p. 64.

[3] idem, pp. 140–41.

that socialism would undermine democracy. Hayek was converted by his mentor, Mises, to the belief that most social evils came from state interventions into market processes and would be remedied if the interventions ceased. It may well be true that Popper's limiting criteria for piecemeal social engineering would considerably restrict the scope for *extension* of state controls or activities at a particular time, but the proposal to dismantle them completely and suddenly would also run foul of these criteria if we consider how extensive the economic role of the state has become in many democratic countries. Nor would Popper think that social science, as distinct from social ideology, can set *a priori* limits to any reforming role for the state which is compatible with democracy, although there is undoubtedly need for caution in this connection, especially in view of Hayek's warnings about the increasing threat of extensive state power to democracy.

There are, of course, problems in social engineering, whether private or public, and it would not be difficult to find examples of blunders; e.g. Britain's recent attempt to impose a poll tax, or the general switch from fixed to floating exchange rates after 1972. Such blunders emphasize the need to identify social problems as clearly as possible, and to analyse carefully such ways of dealing with them as appear to be promising. But in neither respect can social science provide anything like so good a basis for social engineering as do physics, chemistry and biology for civil, mechanical, electrical, chemical or genetic engineering. Political consensus, moreover, is not always easy to obtain for the toleration of private activities nor for the implementation of state activities. Democratic discussions and procedures, too, can lead to damaging delays, and at all levels of state action there is scope for inefficiency, obstruction and corruption. But none of that is inevitable, and Popper sees piecemeal social engineering as the best hope for improving society and for developing the social sciences, firmly expressing optimism about possibilities of democratic social progress[4]. His optimism is not based on any pretension of knowledge about the future but on a view that past and present achievements in improving society are impressive, and that they show us 'what is humanly possible'.

Lord Boyle tempered his generous appreciation of Popper's work with a criticism of what he took to be a limited view of the scope for piecemeal social engineering. The weakest point, he thought, was Popper's 'presupposition that the sole purpose of social engineering should be to eliminate avoidable evils.'[5] He agrees that there are no institutional means of making anyone happy, but asks whether there are not such means for increasing possibilities of happiness, as the American Declaration of Independence stated. Economic growth and provisions for education can increase these possibilities, so that the objectives of piecemeal social engineering should be suitably widened. I do not think Popper could disagree, although he would consider reducing social evils to be a more clear-cut and urgent objective than increasing possibilities of happiness. No doubt his recognition of social evils stressed by Marx and his anxiety to show a different way of reducing them than by revolution and collectivist planning explain the omission which Boyle points out.

The Frankfurt School of libertarian Marxists made a very different challenge, which led to a vigorous debate during the 1960's. Its members saw Popper's piecemeal social engineering as manipulating people in order to preserve capitalist society, in spite of his emphasis on democracy and criticism for ensuring that attempts at improving social conditions work properly. In their view, liberation of the people from capitalist manipulation required a holistic reconstruction of society, to be achieved if necessary by revolution. As Lessnoff remarks, it is astounding that these Marxists deny that this kind of reconstruction is itself social engineering, preferring to regard it as 'liberation'[6]. Popper, of course, would regard it as a recipe for tyranny rather than liberation, and as leading to a much worse type of reconstruction than what its advocates envisaged.

Natural science, he thinks, has developed very largely through a piecemeal concern with practical problems. For, in dealing with practical problems of an engineering kind, natural science has exposed theoretical problems of great significance. Galileo's investigation of a problem in ballistics led to his parabolic law for the flight of a projectile, and to his determination of a constant acceleration for falling bodies. These results founded the science of mechanics and were used, and corrected, by Newton in developing his celebrated laws of motion. Carnot's investigation of the cyclic heat engine led to the new physical science of thermodynamics. Pasteur's practical investigation of the souring of wine and beer led to the development of bacteriology as an important branch of biology.

[4] *Conjectures and Refutations*, Ch. 19.

[5] *The Philosophy of Karl Popper*, pp. 855–56.

[6] *The British Journal of Political Science*, 1980 p. 115.

Newton's physics had quickly became a scientific ideal, not only for pro-naturalistic historicists but for respectable economists. Adam Smith wrote about Newton's system and made some use of its hypothetico-deductive method in his own work, both in economics and ethics. James Mill, Ricardo's mentor, believed that political economy had the same aim as physics in explaining 'the whole subject to which it relates'. J.B. Say also took Newtonian mechanics as the appropriate model for economics, and Gossen was praised by Walras for 'combining the glory of Copernicus with that of Newton because of his solution of the social question'. Darwin's theory of evolution and natural selection likewise strongly influenced those who took an 'organic' view of society. Popper, however, urges that social science 'should look not so much for its Newton or Darwin, as for its Galileo or its Pasteur[7]. For, as experience has shown, there as little hope of discovering generalizations about social phenomena comparable in sweep and soundness to those about astronomical phenomena, but real hope of making useful findings about particular social problems. (More is said about these matters in Appendix II.)

This does not mean ignoring or neglecting theory. It has to be used wherever it can help in dealing with practical problems, and tackling such problems often gives rise to interesting theoretical problems. There can be fruitful interaction in this regard. The technological approach to social problems, besides helping us to select problems, checks our tendencies to metaphysical speculation in social matters by requiring standards of clarity and practical testability. It can, accordingly, lead to more fruitful discussion and criticism of social problems and theories.

Medawar, a distinguished medical scientist and a convinced Popperian, strongly recommended this piecemeal, practical approach to fellow scientists: 'to start with a concrete problem, but then to allow the research to open out in the direction of greater generality so that the more particular and special discoveries can be made to rank as theorems derived from statements of higher explanatory value'[8].

There is, accordingly, a methodological unity in this respect between the social and the natural sciences, just as there is in their common use of conjectures and refutations. Hayek had rightly attacked what he called scientism—'the slavish imitation

[7] *The Poverty of Historicism*, pp. 59–60.
[8] *Pluto's Republic*, pp. 38–39.

of the method and language of science'[9]. But, convinced by Popper's arguments against the naturalistic doctrines of historicism, he later wrote: 'Sir Karl Popper has taught me that natural scientists did not really do what most of them had told us that they do but also urged the representatives of other disciplines to imitate. The difference between the two disciplines has thereby been greatly narrowed.'[10] And in his latest book, Hayek endorsed 'piecemeal improvement based on immanent criticism'.[11] It is, of course, quite different from the dogmatically held and naive belief that aping what are taken to be the methods of natural science can lead to equally impressive results in the social sciences.

[9] *The Counter-Revolution in Science*, p. 24.
[10] *Studies in Philosophy, Politics and Economics*, p. viii.
[11] *The Fatal Conceit*, p. 69.

19. INDIVIDUALISM

The central concept of liberalism is that under the enforcement of universal rules of just conduct, protecting a recognizable domain of private interest, a spontaneous order of human activities of much greater complexity will form itself than could ever be produced by deliberate arrangement.

F.A. Hayek

In the preceding section it has been argued that democracy is needed for gaining practical knowledge about society through attempts at improving social conditions, and especially if the aim is to improve the general welfare. 'Society', 'social conditions' and 'general welfare', however, are vague terms, and something has to be said about what they can mean. Social phenomena are taken to comprise the aims and activities of individuals and of collectives or groups of individuals, and also the traditions and institutions which influence or connect these aims and activities. There are two methodological views about the ways in which these phenomena should be studied.

Methodological collectivism takes the important social phenomena to be groups or collectives together with institutions, because it attributes to them needs, purposes, functions or causal influences which *transcend* those of the individuals who belong to them or come under their influence. This, of course, is the holistic view, held by Plato, Rousseau, Hegel and Marx, the view that social wholes 'are greater than the sum of their parts'. Popper regards this as trivial. In any set of things there must be, besides the things themselves, relations between them, relations which cannot be deduced from the things and which can be studied objectively. Quantum mechanics, for example, does not study just particles but systems of particles. Social sciences, similarly, study structural relations between individuals and groups of individuals, but do not necessarily attribute transcendental needs or purposes to groups or collectives. Methodological individualism is against such attribution, holding that collectives or institutions have no empirical existence apart from the individuals to whom they relate.[1]

Popper's objection to methodological collectivism, which he calls 'naive collectivism', is that what it proposes to take for scientific study—groups, classes, nations, societies, civilizations, etc.—are not themselves empirical phenomena but theoretical constructs, and often derived from simplistic populist theories. It is, therefore, impossible to make testable theories about collective phenomena unless they can be analysed, not as independent wholes, but in terms of the objective aims, actions and interactions of individuals, and especially of those who manage the collectives. Some collectives, of course, are very important in this respect (e.g. political parties, religious groups, trade unions or business associations), as are some institutions (e.g. moral codes, legal systems, types of government, markets or monetary systems).

Methodological individualism thus takes the basic social phenomena to be the activities of individuals together with the institutions and traditions which influence their aims and connect their activities. It does not acknowledge that collectives of individuals have any significance as social phenomena that is distinct from the aims and activities of their members. Nor does it treat customs, traditions or institutions as having any other significance than that of coordinating and influencing individual activities. As Hayek said, in an essay which traces the development of this interpretation of individualism to Locke, Mandeville, Hume, Tucker, Ferguson, Adam Smith, Burke, de Tocqueville and Acton, 'its basic contention is that there is no other way toward an understanding of social phenomena but through our understanding of individual actions directed towards other people and guided by their expected behaviour'.[2]

Popper, of course, fully accepts methodological individualism but stresses that it should not be confused with the psychologism which, we have seen, he rejects. Methodological individualism has no need for a particular psychological method. There would, moreover, be a danger in that, as is shown by Mill's drift from psychologism into historicism[3]. Popper emphasizes that his own method of situational logic is not a psychological but a logical method, and that 'the human or personal factor will remain *the* irrational element in most, if not all, institutional theories'[4].

Menger had a firm grasp of methodological individualism or, as he usually called it, the 'atomistic', or 'compositive' method of analysis, and it seems likely that his views influenced Popper,

[1] *The Poverty of Historicism*, p. 82; *Conjectures and Refutations*, p. 341.

[2] *Individualism and Economic Order*, p. 6.
[3] *The Open Society and Its Enemies*, Ch. 14.
[4] *The Poverty of Historicism*, p. 157.

if only in an indirect way. By economy Menger meant 'the precautionary activity of humans directed towards covering their material needs', and he took his task to be finding laws for such activity based on the simplest 'typical' elements—the needs of individuals, available goods and resources to meet their needs, and desires to satisfy needs as completely as possible, subject to fallibility of expectations, deficiencies of knowledge and external compulsion'. Thus 'we reduce human phenomena to their most original and simplest constitutive elements'[5], and then 'investigate the manner in which more complex economic phenomena evolve from their elements according to definite principles'[6]. Like Popper, Menger also condemned historicism, holism and organicism[7].

Their coincidence of methodological views is most striking in regard to the task of social science. Consciously reflecting the ideas of Montesquieu and Burke, Menger emphasized that most social institutions have not been deliberately designed but are rather the 'unintended result of individual efforts of members of society, i.e. of efforts in pursuit of individual interests'[8]. His examples include money, division of labour, markets and the state itself. Notwithstanding his rejection of biological analogies, he described these unplanned results of social development as 'organic' and, although not regarding 'what had organically developed as unassailable', warned that it is important not to sacrifice those institutions which had proved their worth 'to the one-sidedly rationalistic mania for innovation'. We should 'prevent the dissolution of the organically developed economy by means of a partially superficial pragmatism, a pragmatism that contrary to the intentions of its representatives inexorably leads to socialism'[9]. For him, 'a noteworthy, perhaps the most noteworthy, problem of the social sciences' was to explain 'how it can be that institutions which serve the common welfare and are extremely significant for its development come into being without a common will directed towards establishing them'.[10] He went on to point out that many economic phenomena, which are not institutions, arise in the same way, and therefore need a similar explanation

[5] *Investigations into the Method of the Social Sciences*, pp. 63–64.
[6] *Principles of Economics*, pp. 46–47.
[7] *Investigations into the Method of the Social Sciences*, Bk. 2 Ch. 2 Bk. 1 Ch. 6. and Bk. 4 Ch. 2.
[8] idem, p. 158.
[9] idem, p. 177.
[10] idem, p. 146.

as unforeseen and even (by some) undesired consequences of self-seeking individual actions; e.g. prices, interest rates, rents and profits.

Popper's formulation is almost the same as Menger's but less qualified: 'the main task of the theoretical social sciences . . . is to trace the unintended social repercussions of intentional human actions'[11]. It is in line with the judgement of two major economic theorists in their book on the theory of general economic equilibrium: 'the notion that a social system moved by independent actions in pursuit of different values is consistent with a final coherent state of balance, and one in which the outcomes may be quite different from those intended by the agents, is surely the most important intellectual contribution that economic thought has made to the general understanding of social processes'[12].

Popper contrasts this view with what he calls 'the conspiracy theory of society', which directly attributes social events to designs or plots of powerful people or groups; e.g. the Elders of Zion, imperialists, international bankers, communists, etc. Although not denying that conspiracies occur, nor that they may sometimes have important results, he thinks they usually have a very minor part in social change, and he praises Marx's discernment in rejecting conspiracy theories along with psychologism.

Methodological individualism, then, is opposed to methodological collectivism, and is not to be confused with psychologism. Nor is it to be confused with egoism which can be regarded as an opposite ethical category to altruism[13]. But individualism can also be used in the ethical sense of connection with an Aristotelian idea that 'justice is something that pertains to persons'. Pericles linked this to the cognate ethical idea of altruism, as did the Christian church, so that 'this individualism, united with altruism has become the basis of our western civilization'.[14]

Popper subscribes to individualism, both as a methodological principle and as an ethical postulate. Although there is no necessary connection between them, they have often been confused, both by some of his predecessors and by some of his critics[15]. The ethical postulate has been strongly associated with utilitarianism. Bentham praised Hume for destroying Rousseau's

[11] *Conjectures and Refutations*, pp. 341–42.
[12] K.J. Arrow and F.H. Hahn, *General Competitive Analysis*, p. 1.
[13] *The Open Society and Its Enemies*, Vol. I, p. 100.
[14] idem, p. 102.
[15] In § 24 Klant's confusion about this distinction will be discussed later.

fiction of an original social contract and for then demonstrating 'that the foundations of all *virtue* are laid in Utility'[16]. Their ideas of utility, however, did not coincide. For Hume, utility was the *symptom* of virtue: 'personal merit consists entirely in the usefulness and agreeableness of qualities to the person possessed of them, or to others, who have any intercourse with him'[17]. For Bentham, it was the *standard* by which we should judge virtue, and meant 'the greatest happiness of the greatest number' in accordance with an explicit felicific calculus.

J.S. Mill had difficulty in accepting this idea and, although professing utilitarianism, changed its meaning to allow for qualitative differences in pleasures and pains, and also in the individuals experiencing them. That has long been thought to undermine utility as a final ethical principle, but Mill more than compensated by stressing the normative importance of 'human liberty and spontaneity', which are not reducible to utility or to anything else. According to Morley, Mill had taken from Turgot and Condorcet the idea of perfectibility for both man and society, and this is 'the key alike to the *Liberty*, the *Utilitarianism* and some of the most original chapters in the *Political Economy*'[18].

Popper also takes moral issues very seriously, more seriously even than intellectual issues, but he is reticent about making ethical pronouncements because he thinks 'so much of the talk about values is just hot air'[19]. He has, however, commented on utilitarianism, pointing out a moral asymmetry between pain and pleasure. Human suffering makes a direct moral appeal for our help but there is no such appeal to increase the pleasure of someone who is not suffering. It would, therefore, be an improvement to replace the principle of the greatest happiness of the greatest number by that of the least amount of avoidable suffering for all, and to add that unavoidable suffering should be shared equally, e.g. food shortages. He even suggests that this amended principle could well be made one of the basic principles of public policy[20].

Presumably other basic principles of public policy would be 'a rule of law, of equal justice, of fundamental rights and a free society'[21]. These are described as liberal principles, and Popper

[16] *Fragment on Government*, Ch. I.
[17] *An Enquiry Concerning the Principles of Morals*, s. IX.
[18] See, for this whole paragraph, R.P. Anschutz, *The Philosophy of J.S. Mill*, Ch. II.
[19] *Unended Quest* p. 193.
[20] *The Open Society and Its Enemies*, Vol. I Ch. 5 n 6 and Ch. 9 n 2.
[21] *Conjectures and Refutations*, pp. 341–42, p. 5.

takes a liberal to be 'a man who values individual freedom and who is alive to the dangers inherent in all forms of power and authority'.[22] Such principles, however, would be unrealizable if we did not accept the epistemological view that there *are* objective facts and an objective truth which corresponds with them. For liberal principles can be secured only in a democracy that can dismiss illiberal governments, and democratic action to check tyranny depends on widespread, inter-subjective agreement that liberal principles are being infringed or threatened.

[22] idem, p. viii.

20. MODELS AND INDIVIDUALISM

The logic of reasoning with models is thus the chief basis of scientific method in economics. It has had a most important part in the building up of economic theory, and has been of even more obvious importance in the different techniques of applied economics.

E. Malinvaud

Criticisms have been made of Popper's insistence on methodological individualism. Blaug, for example, after mistakenly accusing him of muddling economic and political liberalism, asks why methodological individualism should be made a necessary, or even a principal, feature of social science[1]. He goes on to assert that exclusive adoption of this principle would rule out macroeconomics so that there must be something wrong with it, and quotes, with approval, similar comments made by Broadbeck[2]. Ryan has questioned why Popper calls this principle methodological individualism since he allows it to include the situations in which individuals find themselves and also interrelations between them. Opposition to holism and methodological collectivism does not, he thinks, entail methodological individualism. For situations and interrelations can be described in non-holist terms without reference to individuals; e.g. kinship and language rules, which are often needed for identifying 'initial and boundary conditions'.[3]

Ryan's questions show some failure to appreciate that *methodological individualism* and the method of *situational models* are closely linked in Popper's prescription for the theoretical social sciences. That could have been seen in *The Poverty of Historicism*[4], but came out more clearly in 'The Rationality Principle'[5]. This explained that a social model would include among its typical initial conditions:

(i) some physical things and their properties (e.g. natural resources, buildings, transport systems, and machines);

[1] *The Methodology of Economics*, pp. 46–52.
[2] 'Methodological individualism: definition and reduction', '*Philosophy of Science* 1958.
[3] *The Philosophy of Social Explanation*, p. 129.
[4] op. cit. Section 31.
[5] *A Pocket Popper*, Section 29.

(ii) some institutions and their properties (e.g. laws, markets and money);
(iii) some aims of people (e.g. maximization of utility, profits, or wealth);
(iv) some elements of knowledge available to people (e.g. technology, market prices, or taxes); to which could well be added
(v) some expectations which people hold about future social conditions (e.g. about war, unemployment, inflation or exchange rates).

It is, of course, likely that some of the initial conditions change, and that their change may be at least partly explicable in terms of the working of the model. What makes it work is, as we have seen, the rationality principle that actions taken are appropriate to the problem situation, a principle which escapes the difficulties of psychologism.

The last three conditions, obviously, relate to individuals and to their mental equipment so that, although Popper rejects psychologism, he accepts Menger's emphasis on subjective phenomena, *treated objectively*, as the basis for economic analysis and generalizes it, as situational analysis, to cover other social sciences.

Physical conditions belong to World 1, aims and expectations to World 2, and both institutions and knowledge to World 3. Institutions have the major role of serving to coordinate or interrelate the activities of individuals in attempting to realize their aims subject to the limitations imposed by the physical environment and by the institutions themselves. The kinship and language rules mentioned by Ryan are obviously institutional, and they are related to individuals in the way just explained.

Blaug's question about macroeconomics is a more difficult one. The Austrian School of economists, whose work inspired Popper's situational models, has always had severe reservations about macro-type analysis. Hayek, for example, wrote that it is an illusion to suppose that a macrocosm of collectives or constant configurations can be strictly defined or described in objective terms[6], although Streissler remarks that Hayek's early work on the trade cycle was of a decidedly macro character[7]. Lachmann, similarly, states that a macroeconomic magnitude must never be brought into an argument without giving a careful account of its micro elements

[6] *The Counter-Revolution of Science*, p. 104.
[7] *Roads to Freedom*, p. 249.

because any change in their constellation can affect the macro element[8].

Popper, like Menger before him, speaks of *typical* initial conditions and of *typical* relations between them and individuals; and 'typical' suggests something like a mode or average, which is a macro concept. There is, undoubtedly a need in social analysis to generalize about individual aims, expectations and behaviour if we are to avoid impossible demands on data collection and impossibly complex analysis. Hicks has shown that the Classical English economists, although liberals, were basically macro theorists[9], and when Marshall moved towards catallactics he worked in terms of 'representative' men and firms to study markets and industries.

Some of this generalization has involved statistical measures of aggregates or averages—commodity flows and stocks, incomes and wealth, money supplies, price indices, average interest rates, profit rates, wage rates, unemployment rates, etc. These measures have involved difficulties which are well-known to most economists. Diverse elements grouped under the same classification can be aggregated or averaged only on a value basis, and this basis will shift with changes in the relative prices of grouped elements. Such changes can be frequent and large, and especially affect those valuations (e.g. of capital goods) which depend upon future prices and so upon expectations. A further serious problem is that statistical measures of macro variables are often so difficult and expensive to collect that economists have to rely on measurements made by governmental agencies, and hence subject to administrative or fiscal considerations which, along with imperfections of data collection, can cause marked divergences of these measures from the theoretical concepts which they are taken to represent. For both sets of reasons, the imprecision of a macro measurement is likely to increase with the degree of its aggregation.

Other aspects of generalizing individual activity in society do not involve measurement so much as selection—the selection of typical aims, expectations and situations. Objective indications of aims and expectations can sometimes be obtained from such published sources as articles of association and prospectuses of companies, constitutions of trade unions and friendly societies,

[8] 'Toward a Critique of Macroeconomics', in E.G. Dolan, editor, *The Foundations of Modern Austrian Economics*, p. 152.
[9] *Classics and Moderns*, Ch. 1.

legislation covering these or instituting public agencies, and from the formal, periodical reports of such bodies. But in the case of individuals, as distinct from formal associations of individuals, there is little but guesswork to determine their aims and expectations although sampling surveys of consumer or business sentiment throw some light. In any case, the published aims and expectations may be vague and incomplete, and individuals will have many and partly diverse aims and expectations. Theorists have, accordingly, to postulate, as best they can, a manageably small number of aims and expectations which they take to be typical for the group that they are analysing, and to revise the postulate as tests of their theories indicate that this is needed.

It cannot be doubted that there are uncomfortable compromises to be made between the impossible complexity of basing social analysis on the behaviour of numerous individuals and using, instead, macro concepts which must be, to some extent defective. Yet it would be a mistake to regard macroeconomics as distinct from microeconomics. That would be the case only if macro concepts and relations could be made independent of individuals' aims, expectations and behaviour. Hahn points out that Keynes, who is supposed to have founded macroeconomics, 'never went on such a hare-brained path. . . . Almost two-thirds of *The General Theory* is in fact devoted to microeconomics'[10].

I conclude, therefore, that notwithstanding the difficulties of macro analysis, and those of providing satisfactory micro foundations for macroeconomics[11], Popper's insistence on methodological individualism is sound and that, contrary to Blaug's assertion, it does not make the impossible demand of excluding all macro concepts or analyses. It only insists that these must always be related, so far as possible, to the aims, activities and valuations of individuals—and never given an independent life of their own.

This is all that Lachmann and some other Austrian economists have demanded in regard to methodological individualism, and none of them have tried to avoid analyses based on typical aims and conditions. What they have condemned are holistic analyses of the Marxist or Sraffian type which try to understand the economy in terms of technical relations between macro concepts, those types of theory or econometric analysis which assert

[10] *Equilibrium and Macroeconomics*, p. 311.
[11] See, for example, E.R. Weintraub, *Microfoundations*, and H. Theil, *Linear Aggregation of Economic Relations*.

relations between such concepts irrespective of their connections with individuals, and aggregations which ignore changes in relative prices. That, of course, excludes a good deal of what some regard as macroeconomics but still leaves necessary room for macro concepts in economic analysis.

21. INSTITUTIONS AND TRADITIONS

The Americans have shown that it would be wrong to despair of regulating democracy by the aid of manners and of laws.

Alexis de Tocqueville

Popper's insistence that social science has to seek explanations of important social phenomena largely in terms of the unintentional results of intentional individual aims and actions has already been noticed. Both he and Menger stressed that such explanation was often needed for social institutions and also for many economic phenomena, notably market prices. Popper argues that it is even more needed to explain traditions, which have much in common with institutions but are less subject to conscious creation or deliberate change[1].

Traditions, on his view, refer to those aims, tastes or values which a body of people have in common with others, over successive generations, and which influence their behaviour in similar ways; examples are family or group loyalties, respect for law and order, honesty in dealings with others, and critical rationalism in science. Institutions refer to the common observation of a certain set of norms for joint fulfillment of certain *prima facie* social functions, public or private; examples are a police force, an educational system, a scientific association, a supermarket chain, or an insurance company.

Traditions are closer to individuals than institutions are, and can have an important role in ensuring that institutions function as they are supposed to do. For example traditions of honesty and fair dealing may lead a government department to avoid corruption among its members, or else lead to effective demands from politicians or citizens that the bureaucrats mend their ways.

There is what Popper calls a certain *ambivalence* about social institutions. They are set up to perform accepted functions but their powers may be misused to pervert those functions. Members of a police force, for example, may accept bribes to protect criminals instead of arresting them, members of a customs service may asssist smugglers instead of preventing them, or generals

[1] *Conjectures and Refutations*, Ch. 4.

may use an army in order to tyrannize a country instead of defending it against aggressors. It is important, therefore, that institutions should be well-designed, perhaps in conjunction with other institutions, in order to promote good performance of their proper functions. That idea lay behind the checks and balances of the American Constitution.

But no institution can be knaveproof; its proper functioning depends in the last resort on the people who man it or on those who can control them. That is why traditions are important; they are closer to influencing people's thinking and behaviour.

Traditions are thus needed as a kind of link between institutions and the values and hopes of individuals. They are precious and, like institutions, cannot be taken for granted. Europe lost the tradition of science so brilliantly begun in Ancient Greece, and did not revive it until the Renaissance. In our own day, traditional family life has been greatly damaged by easy divorce, homosexual relations, and decline of parental authority over children. This does not mean that traditions or institutions are sacrosanct. Neither were created by God or Nature, and neither have the kind of personality attributed to them by holists or historicists. They rather resemble scientific theories in being open to critical examination, empirical testing, correction and innovation. But they should not be changed until their functions, and so the consequences of their loss, are well enough understood.

Among these consequences could be social instability. Some degree of order is needed if people are to have sufficient rational predictability in their social relations to order their own lives and to conduct their affairs. If this order deteriorates through the collapse of important traditions or institutions, there could be serious anxieties and frustrations which might lead to further harm because of adverse economic and political consequences. That, as we saw in the discussion of holistic planning, could lead to government interventions which damage democracy.

Traditions, no doubt, have developed from the taboos and customs of primitive societies, and were connected with cosmological and religious beliefs which all cultures have had in some form or other. They would have become associated with the development of institutions in a mutually reinforcing way. Both, too, would have been subject to something like a Darwinian process of evolution which became more conscious and deliberate as critical faculties developed along with language and writing. The closed society breaks down as social institutions become recognized as serving human purposes, and as alterable

for better service of those purposes[2].

The paramount institution is, of course, the state, which can give other institutions the protection and support which they need, modify and even create some of them. They all have to be protected by law, manned and financed. For that reason, and also because of the basic role of institutions in establishing a social order, 'all long-term politics is institutional'[3]. As history abundantly shows, this very power of the state creates great dangers of coercion and exploitation of individuals. When such evils have become intolerable, and circumstances have favoured revolution, some tyrannical governments were overthrown. But, as history also shows, revolutions have seldom realized the intentions of those who led them because of resulting disruption to social life and the unforeseen consequences of such disruption. The great advantage of democratic institutions, so long as they are effectively manned, is that they enable the governed to get rid of bad rulers without the violence of revolutionary upheavals. This, for Popper, is the basic characteristic and virtue of democracy.

Government, then, is necessary to protect and support the institutions upon which social life depends, and democratic institutions are necessary to prevent government from becoming tyrannical. But they are not sufficient for this purpose because the political power of government can be strongly reinforced by its economic power. Popper, therefore, holds with other liberals of the classical kind defined by Hayek[4] that, in the economic sphere, we should be wary of creating or strengthening any institution if this would enhance the power of the state. Marx might have been similarly uneasy about state power when he looked forward to 'the withering away of the state' under communism[5].

Government intervention in economic life may take two forms. One form is the creation of a protective framework of laws to prevent undesirable activities or to assist the development of desirable activities. Examples are labour laws to protect workers against bad working conditions, banking laws to protect depositors against loss of their money, or anti-monopoly laws to foster competition. The other form of intervention is much more direct, giving power to some state agencies to act, within certain limits, as they consider necessary for achieving specific purposes of

[2] *The Poverty of Historicism*, Sections 21 and 32.
[3] *The Open Society and Its Enemies*, Ch. 7, Section III.
[4] *Individualism and Economic Order*, Ch. I.
[5] *The Open Society and Its Enemies*, Ch. 17, Section VII.

legislation. Examples are licensing authorities for industrial or trading activities, wartime direction of labour, or foreign exchange controls. Popper, as a democrat, favours use of the first form of intervention rather than the second, although recognizing that this may not always be possible. An important case is the state's budget, because some taxation has always to be levied in order to support the operations of the government and of other institutions which depend on the state. But a liberal will be anxious that these activities do not unnecessarily magnify state power nor infringe individual liberties, including that of spending his own income in ways that suit him.

Popper concludes his *Poverty of Historicism* by sketching an institutional theory of scientific and industrial progress as a superior alternative to the psychologistic and historicist theory by which Comte and Mill attempted to explain this most striking development of modern times. Their explanation ran in terms of 'the progressiveness of the human mind' impelled by 'the desire of increased material comfort'. Popper sees two weaknesses in their explanation. One is that it neglects other qualities of the human mind, such as forgetfulness and laziness, which could equally well be invoked to explain economic decline and no doubt would have been had this happened. The other is that it completely neglects the social environment of institutions and technology.

Scientific and industrial progress could undoubtedly be halted by sufficiently restricting the functioning of such institutions as research laboratories, scientific publications or conferences, universities or schools, and, in the end, freedom of thought. These institutions all require legal protection or state aid. It can therefore be concluded that 'ultimately, progress depends largely on political. . . . institutions that safeguard the freedom of thought: on democracy'[6]. Although these political institutions are necessary for scientific and industrial progress, they cannot guarantee it. Something also depends on traditions, and especially on the traditions of democracy and critical rationalism.

Viewed from the standpoint of an institutional theory of progress—which is, itself, an application of situational logic—the psychologism of Comte and Mill is a minor factor and perhaps not even a helpful one. For 'we might say that the human factor is *the* ultimately uncertain and wayward element in social life and in all social institutions'[7]. Nor can it be controlled because,

[6] *The Poverty of Historicism*, s9, p. 155.
[7] idem, p. 158.

as Spinoza observed, thought, unlike action, cannot be fettered. Attempts to control it, moreover, by institutional or coercive means would undermine the objectivity of science, and hence scientific and industrial progress.

Because of the importance of scientific objectivity for both intellectual and social progress something should be said here about the challenge to it from the so-called *sociology of knowledge*, which has some striking resemblances to psycho-analysis. Its followers claim that scientific theories, and especially political or economic theories, cannot possibly be judged as objectively true or false because they are the outcome of thought processes which are inescapably, and perhaps unconsciously, influenced by the social conditions and interests of those who propound or accept them. Yet if these prejudices are analysed their exposure could help to purge theories of bias, although the cure is never likely to be complete.

This brand of sociology was developed from certain ideas of Marx by Mannheim, Scheler and Durkheim in opposition to Weber's ideal of a value-free science, and it has more recently been strongly advanced by the Swedish economist and Nobel Prizewinner, Myrdal. They have promoted the false idea that to explain the psychological motivation or sociological condition of a theorist is to explain away his theory, and are open to the obvious *riposte* that if every theory is of doubtful truth so must be the sociology of knowledge itself.

It is by no means hard to detect subjective influences or class interests in some social theorizing, but their detection falls short of demonstrating that no social scientist can escape such influences. How, on this view, could the theory of stockbroker Ricardo have had such influence upon that of communist Marx? How could the ideas of capitalist Engels have been so acceptable to proletarian leaders? Or how could the American behaviourist Watson and the Soviet physiologist Pavlov have had such similar theories about behaviourism?

Popper accuses the sociologists of knowledge of falling into error for the ironic reason that they neglect the sociology of science itself. Instead, they focus on the psychology of individual scientists, ignoring the fact that scientific objectivity 'is not the product of the individual scientist's impartiality but the product of the social and public character of scientific method'[8]. Scientific theories and findings are always exposed to the scrutiny and criticism of other scientists, many, in a democracy, having

[8] *The Open Society and Its Enemies*, Vol. 2, p. 220.

different opinions, aspirations, economic interests or ideologies. There would, admittedly, be little hope of scientific objectivity if this depended only on the impartiality of individual scientists. But scientific institutions for the dissemination of facts and theories, for their criticism by other scientists and for testing theories in reputable laboratories or in other ways lead to both personal and public checks which can reduce, if not completely eliminate, bias from theories.

The objectivity of science is thus not a matter of individual or group psychology but one of inter-subjective criticism and testing until a provisional consensus is reached about the acceptability of a theory or any test of it. Social science, admittedly, has lagged much behind natural science in these respects, but this situation could improve with the further development of intellectual traditions and institutions within social science[9].

It is relevant here, as in other contexts such as methodological individualism, to notice Popper's reply to a criticism, made by Winch, about overlooking that aims can be attributed to institutions as well as to people. Winch had written that 'to think of . . . institutions as simply instruments . . . misses the point that educational institutions, to stick to my original example, are a source of social and cultural values of their own'.[10]

Popper replied: 'At any moment of time we, and our values, are the products of existing institutions and past traditions. Admittedly, this imposes some limitations on our creative freedom, and on our powers of rational criticism. Yet it also provides our critical and creative powers with stimuli and with objects; though we are the products of institutions and traditions, our rationality consists in our being able to criticize and reshape institutions and traditions. And, though the regulative values which enter into these critical activities are, largely, derived from these institutions and traditions, they are themselves criticizable, and changeable. These, I think, are facts.'[11]

[9] *The Open Society and Its Enemies,* Ch. 23, and *The Poverty of Historicism,* pp. 155–56.
[10] *The Philosophy of Karl Popper,* pp. 896–97.
[11] idem. p. 1168.

22. THE ROLE OF HISTORY

As economics pushes beyond 'statics', it becomes less like science, and more like history.

John Hicks

Situational logic, deriving from marginal utility economics, seems to be concerned with what Hayek calls 'social structure' rather than with social change[1]. Supposed laws, such as those of diminishing marginal utility and equi-proportional marginal utilities, give, as he says, only abstract characteristics of this situation, 'relations between kinds of elements about which individually we can know little'[2]. Any predictions which it can give will be only 'pattern predictions', relating to the 'general attributes of structures'[3].

A similar view was held by Pareto about the general equilibrium theory which he helped to develop; he pointed out that this theory could not predict prices because it would be absurd to think that we could ever have enough data for that purpose[4].

Popper, of course, has a much narrower view of the scope of situational logic in recommending piecemeal analysis of practical problem situations. He would be far from denying the possibility that such piecemeal work can widen out, as Medawar indicated, into more general theories; nor would he wish the insights reached by abstract, general theories, such as general equilibrium analysis, to be neglected wherever they could help piecemeal analysis or piecemeal social engineering. But it could be reasonably held that, if economics is to advance beyond the abstract and general analysis of social structures, concrete and piecemeal analyses are needed.

The characteristic problems of economics, however, are not those of structural patterns, according to Hicks, but those of change; and 'the extent to which these can be reduced into scientific terms is rather limited', because 'at every stage in an economic process new things are happening'[5]. He spoke approv-

[1] *Studies in Philosophy, Politics and Economics,* p. 16.
[2] *New Studies in Philosophy, Politics and Economics,* p. 88.
[3] idem, p. 28.
[4] *Manuel d'économie politique,* pp. 223–34.
[5] *Causality in Economics,* pp. x–xi.

ingly, therefore, of a 'counter-factual method 'used by those historians who try to go beyond description to explanation. They have come to understand that causal explanation of past changes requires the use of a model. For to say that A caused B amounts to saying that if A had not occurred then B would not have occurred, and this cannot be known but only guessed or deduced from general principles. Quite weak general principles may suffice for that purpose, and a model is a structure that is based on such principles'[6].

This counter-factual method has some resemblance to situational logic, and would become the same as it if Hicks' 'weak general principles' reduce to Popper's 'almost empty' rationality principle, and if the stress on generality is shifted to 'typical initial conditions'. But Hicks seemed to be emphasizing the causal explanation of a particular historical event rather than, as Popper does, a general theoretical explanation of many similar events.

Popper also thinks that historians have often made more or less conscious use of 'the logic of situations' for historical explanation[7]. He finds himself in agreement with R.G. Collingwood on this point, although disagreeing with his method of 'subjective re-enactment'[8]; for Collingwood emphasized that understanding an historical event required analysis of a situation and how it might be dealt with[9]. Popper holds that there is a further need for 'an analysis of social movements', based on methodological individualism. It would be an analysis 'of the social institutions through which ideas may spread and captivate individuals, of the way in which new traditions may be created, and of the way in which traditions work and break down'.

Individualistic and institutional models of collective entities (e.g. nations, governments and markets) would thus be supplemented by models of political or economic situations and of social movements[10]. He mentions scientific and industrial progress in this connection, and sketches the theory of scientific progress which was noticed in the previous section. These models, situational and dynamic, could be used by historians, together with any scientific laws or other theories needed to explain what they find historically interesting.

There is, however, a difference of viewpoint between the historian and the social theorist. The historian is primarily interested in explaining particular events or changes, possibly using a wide and varying range of models or theories for that purpose, some of them perhaps trivial. The social theorist, on the other hand, is primarily interested in finding and improving models or theories, using a wide range of events or changes to test them. The contrast is not absolute. In so far as the historian is interested in causal explanation he must refer to typical events. But they are not his main interest; he is often much more interested in a specific event and so in bringing out its peculiar and 'accidental' characteristics—a 'concurrence of causally unrelated events'[11].

In some ways, the historian is in a similar position to the applied scientist, who also uses theories in an instrumental way for a particular purpose[12]. And just as an engineer may find that there are difficulties in applying a theory to a technical problem, or expose fresh problems in attempting the application, so might a historian find difficulties in a social theory, and this could stimulate efforts to improve it or to find a better alternative. Such a by-product of historical explanation would then supplement testing of a social theory by attempts at piecemeal social engineering. The social theorist, therefore, might do well to take an interest, perhaps even at times an active one, in historical interpretation as well as in piecemeal social engineering. As Popper says, tests of a model are not always easy to obtain, nor clear cut if they are obtained, but tests of a social model can 'sometimes be provided by historical research'[12].

Hicks has drawn a distinction between an Old and a New Causality. The Old Causality was a system of thought in which 'causes are always thought of as actions by someone; there is always an agent, either a human agent or a supernatural agent'. The New Causality, which became triumphant with the rise of modern science, but also owed something to historians like Gibbon, 'is a matter of explanation; but when we explain, we do not necessarily praise or condemn'[13].

Popper has expressed similar thoughts in condemning the 'conspiracy theory of society', the view that we have to explain social events by discovering those who had an interest in bringing

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[6] 'Is Economics a *Science*?', *Interdisciplinary Science Review*, 1984, p. 218.
[7] *The Poverty of Historicism*, p. 149.
[8] *Objective Knowledge*, Ch. 4.12.
[9] *The Idea of History*, Part V, Section 4.
[10] *The Poverty of Historicism*, p. 149.
[11] idem p. 147; see also Hayek, *The Counter-Revolution in Science*, pp. 115–28.
[12] *The Open Society and Its Enemies*, Ch. 25. II, and *The Poverty of Historicism*, pp. 145–46.
[13] *Casuality in Economics*, pp. 6–8.

it about[14]. It is a very old idea, deriving from primitive and theistic myths about the interventions or plots of gods, such as the Homeric gods who were thought to have brought about the Trojan War. The gods came to be replaced by powerful men or groups; e.g. Jewish financiers for the Nazis or capitalist-imperialists for vulgar Marxists.

Historicism had at least this merit; it reacted against the 'naive method of interpreting political history as the story of great tyrants and great generals, although Popper did not like their substitution of 'spirits—of an age, of a nation, of an army'. He praised Tolstoy for reacting, in his *War and Peace*, against this method of writing history. In his magnificent novel Tolstoy showed what little influence had actually been exerted by famous leaders in 1812, compared with the actions of many unknown people who fought battles, burnt Moscow and invented partisan warfare, or compared with situational necessities such as food shortages and weather conditions[15]. He thus regards Tolstoy as an historicist who combined collectivism with methodological individualism. This made him appealing to democratic socialists who saw, no more than he did, the incompatibility of democracy with collectivism.

Popper thus advocates more detailed analysis of the logic of situations, such as the best historians have used, more or less unconsciously. 'We need studies', he says, based on methodological individualism, of the social institutions through which ideas may spread and captivate individuals, of the way in which new traditions may be created, and of the way in which traditions work and break down'. This means that individualistic and institutionalist models of collective entities, such as nations, governments and markets, 'will have to be supplemented by models of political situations as well as of social movements such as scientific and industrial progress.' Historians could use such models to analyse and explain the problems which interest them.[16]

It is evident, then, that notwithstanding his rejection of the main doctrines of historicism Popper believes that social science and history are mutually dependent. Social science, handicapped in regard to experiment, needs historical material for data, and historical analysis for help in testing theories or seeing how they might be modified. Human history relies partly on social theories

[14] *Conjectures and Refutations*, p. 360.
[15] *The Open Society and Its Enemies*, Ch. 14.
[16] *The Poverty of Historicism*, pp. 148–49.

for interpreting particular events or developments, some branches of history, (e.g. economic history) more than others (e.g. prosopography). Both, moreover, come under the general method of solving problems by conjectural trial and error elimination, which he sees as the path to objective knowledge.

Popper has not added to what he wrote about history in relation to scientific method since he developed his ideas about evolutionary epistemology and about the role of propensities in an evolving world process. But his shift of interest from physics towards biology, and from causal to probabilistic explanation, points to stronger emphasis on change or evolution, and a lesser one on the universality of causal laws, whether strict or probabilistic. That would imply, in turn, stronger emphasis on that piecemeal analysis of practical problems which Medawar so strongly endorsed, and less on abstract theorizing, especially in the social sciences.