

67-15,505

McKINNEY, John Wesley, 1914-
A CRITIQUE OF FRANK H. KNIGHT'S ECONOMIC
PHILOSOPHY.

Columbia University; Ph. D., 1967
Economics, general

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JOHN WESLEY MCKINNEY

1967

A CRITIQUE
OF
FRANK H. KNIGHT'S
ECONOMIC PHILOSOPHY

John Wesley McKinney

1967

Submitted in partial fulfillment of the requirements
for the degree of Doctor of Philosophy, in the Faculty
of Political Science, Columbia University

ABSTRACT

A CRITIQUE OF
FRANK H. KNIGHT'S
ECONOMIC PHILOSOPHY

John Wesley McKinney

Professor Frank H. Knight makes use of a variant of "ideal type" analysis to explain entrepreneurial profit. The theory of competitive price is interpreted as an ideal type construction, strictly applicable only to an economic order where the future is known to all the participants. Under such conditions there would be no contingency, therefore no scope for the decision making which gives the entrepreneur his rationale. Enterprise and profit are defined negatively, through a contrast with the ideal type. They are related to the uncertainty which is inconsistent with perfect competition.

The theory of enterprise is incorporated in a theory of income distribution which Knight proposes as a replacement for the classical (Ricardian) theory. Instead of the latter's analysis of a tripartite division among broad classes of "factors of production," Knight focuses on a division between the "active" function of taking responsibility for decisions and the "passive" function of supplying the various services of labor and property. Knight's theory of capital complements

his theory of enterprise for it purports to show that no relevant economic distinction can be drawn among classes of "passive" income recipients. All productive resources are forms of capital, "the" factor of production.

The entrepreneur who cannot be contained within the static framework of competitive price theory is a special case of the general idea that man's purposive activity eludes the categories of deterministic science. This is the fundamental proposition in Knight's "anti-scientist" philosophy. It poses the central problem of economic methodology, for the economist purports to offer a scientific analysis of purposive conduct. Knight says a truly scientific account of human behavior must be restricted to the observable. But the principal element in economic explanation, the economic motive, cannot be "observed," according to Knight's interpretation of scientific observation, as a sensory contact with the object or event under investigation. However, he holds that the economist can retain his status as a scientist while referring to motives, provided that he treats motives as analogues of the physicist's "forces," though the anti-scientist stresses the narrow scope of this treatment. The scientist must exclude any concern with the content of motives or purposes. The attempt to bring these within science other than as unspecified "analogues of force" is equivalent to proposing the absorption of ethics and aesthetics into a "glorified economics." Knight claims this involves a denial of the "reality of choice."

This conception of conduct that is motivated as opposed to behavior that is caused yields the idea of human freedom contained in the "moral axiom" which is the foundation of Knight's libertarian ethical system. Freedom is conceived as voluntary choice. An ethically ideal community is described as an anarchy without enforced law, where rules of association are voluntarily agreed upon by all the citizens. The economist's model of perfect competition is held to be the blueprint for such an ethically ideal social order. Therefore, economic freedom is said to be prior to all other freedoms.

Knight's economic theory, social science methodology and ethics are derived from a particular concept of mind, one that stresses the radical contrast between the active character of thought and the mechanisms characteristic of inert nature. The present study attempts to appraise Knight's ideas in the three fields from the point of view of an alternative concept of mind, one that locates mind within nature rather than in an insulated place apart. This implies a different view of the nature of scientific method and its applicability to human problems, of the significance of uncertainty and error in human affairs, of the meaning of freedom.

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ONETHE VOLUNTARIST THEORY OF CHOICE(1) Marginalism, Voluntarism, Anti-Scientism

The economic doctrines of Professor Frank H. Knight belong to the tradition in economic thought that goes back to William Stanley Jevons's shunting "the car of Economic science" onto what he regarded as the correct track, the one that took off from a theory of subjective value.¹ Economists within this tradition have sought to develop Jevons's insight by presenting economic theory as a deductive science, its conclusions derived from a postulate expressing the form of all rational choice, "that maximum return from any resource is obtained by equalizing the increments of return from equal small increments of the resource in all the alternative modes of use is the axiom underlying all economic reasoning and may be called the economic principle."² Economic explanation is held to consist in bringing particular cases under a general principle of equalizing marginal quantities, marginal utilities in the expenditure of income, marginal value products in the employment of a productive resource. The theory of rational

1 Jevons, Theory of Political Economy, 4th Ed. (1911), preface. The first edition was published in 1871.

2 Knight, "The Ricardian Theory of Production and Distribution" (1935), reprinted in History and Method, p. 38

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choice thus serves to unify economic theory, performing a function analogous to Newton's force of gravity which showed that such apparently dissimilar phenomena as the motions of celestial bodies and the falling of apples on the earth could be brought under a single principle of explanation.

Knight believes it was in the field of income distribution that the Jevonian theory yielded its most significant fruits,¹ though these were not gathered by Jevons himself. Knight's work as a technical economic theorist has been primarily concerned with the implications for distribution theory of subjective value. His theories of enterprise and capital are presented as products of the integration of economics on the foundation of the subjective value or marginal principle. These theories constitute an approach to distribution offered as an alternative to that of David Ricardo and the classical economists of the early nineteenth century. They viewed distribution as a sharing of the product among broad aggregates of income recipients, classified according to the type of productive resource furnished--land, labor or capital. Knight undertakes to show that when one rigorously develops the consequences of subjective value, the problem of distribution as Ricardo and the classical economists conceived it vanishes from

1 "Marginal Utility Economics" (1931), reprinted in Ethics of Competition, p. 152

economic doctrine.¹ Knight's argument can be briefly paraphrased in this way: Ricardo's problem cannot be fitted into a theory which takes the form of deductions from a postulate of individual rational choice. The class structure of society and the technological characteristics of the various productive resources are not matters of individual psychology. They are not introspected events. To use current terminology, Ricardo's analysis is an exercise in macroeconomics with no legitimate place in a consistently microeconomic theory.

The theory of subjective value raises philosophical and ethical questions of a kind that takes one outside the customary range of technical economic theory. Knight has given special attention to these problems. What is the status of a science that uses psychological or mental data, accessible only to introspective insight? Jevons proposed basing economic theory on the hedonist psychology of Jeremy Bentham. Knight has been among those expositors and interpreters of the subjective value theory who have tried to separate it from its hedonist background. He wishes to present the "axiom underlying all economic reasoning" as a voluntarist theory of choice, one that stresses the act of choice as an expression of man's free will. A voluntarist theory is to be contrasted with a determinist theory

1 Risk, Uncertainty and Profit, preface, p. xl

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of rational choice such as that of Bentham and those "earlier utility or subjective value theorists [who] tended to think of the consumption of any quantity of a particular good as representing or causing a definite quantity of pleasure and of rational economic behavior as that which yields a maximum of pleasure or happiness."¹ In such theories it is doubtful that the chooser can be said to exercise true volition, since he merely responds to the stimuli of pleasure and pain which impinge on his psyche from without.

Instead of taking as the ultimate independent units of his analysis the discrete sensations of pleasures and pains, the voluntarist derives his postulate from the structure of rational choice. This postulate describes facts which "are and can be known only intuitively; they cannot be verified or established by sense-observation . . . "² The value theorist "deals with certain formal principles of 'economy' without reference to what is to be economized, or how . . . "³ All that is needed is an affirmation of the reality of choice. "To live, on the human plane, is to choose."⁴ But in order to choose there must be genuine alternatives, competing ends. The chooser must exercise free will. The economist-as-scientist deals with the means-ends relationship, but he can say nothing about the content of ends. The ends of action and the present

1 "Economics" (1951), reprinted in History and Method, p. 20

2 "Fact and Value in Social Science" (1942), reprinted in Freedom and Reform, p. 243

3 Risk, Uncertainty and Profit, preface, p. xii

4 "Economic Psychology and the Value Problem" (1925), reprint in Ethics of Competition, p. 88

desires that motivate action are outside the scope of scientific investigation. All attempts to define "objective ends" break down because ends are "ideal, conventional or sentimental, . . . Behind them all is the restless spirit of man who is an aspiring rather than a desiring being and such a scientifically un-descriptive and unsatisfactory characterization is the best we can give."¹

To say that ends or desires are outside science is another way of saying that choices are undetermined. Knight feels a particular urgency to reject a hedonism like that of Herbert Spencer, which holds that conduct is motivated by a calculation of pleasures and pains and these are related to biological factors.² If wants or ends could be reduced to biological needs, Knight believes they could be eliminated as real factors influencing conduct. The will would not be free, choice would be illusory.

The theory of voluntary choice is not just the basic postulate of economic theory, for Knight it is even more significantly an ethical principle. "Economic principles

1 "Ethics and the Economic Interpretation" (1922), reprinted Ethics of Competition, p. 34

2 "Spencer bravely reduced the whole system to an ethical absurdity by explicitly carrying desire back to an ultimate justification in the desire to live, postulating that any species 'must' desire what is good for it in a biological sense." "Ethics of Competition" (1923), reprinted, op.cit., p. 71

are simply the more general implications of the single principle of freedom, individual and social, i.e., free association . . . " ¹ To extend freedom, we must expand the area in which economic freedom governs interpersonal relations and reduce that of political power, for political power involves enforced law. The ideal society is an association based exclusively on voluntary agreement, "a society of Crusoes." Such a state of affairs is "inherently unattainable," but "progress in that direction is the final meaning of social-moral progress." ² The model or blueprint for such an association of freely cooperating individuals is provided by the perfectly equilibrated economic system of marginal utility theory. "The 'perfect' market . . . is the embodiment of complete freedom. There are no power relations, since everyone has a choice among a number of equally good alternatives. The freedom in question centers in the right of each to be the judge of his own values and of the use of his own means to achieve them." ³ Libertarian ethics is an elaboration of the moral implications of voluntary choice.

To accept individualistic voluntarism as an ethical principle implies acceptance of a particular view of the

1 "The Role of Principles in Economics and Politics" (1951), reprinted in History and Method, p. 257

2 "The Rights of Man and Natural Law" (1944), reprinted in Freedom and Reform, p. 300

3 "The Role of Principles," op.cit., p. 258

nature of economic science and its methodology. How can one apply the techniques of deterministic science to the undetermined choices of free men? Insofar as human activity is free--that is, creative and problem solving--it necessarily implies uncertainty and error. To bring free choices within the scope of science, we must abstract from all uncertainty, and in this way, turn the creative, freely choosing mind into an object of science. So uncertainty plays a crucial role in Knight's system of ideas. In fact, he believes the treatment of uncertainty is the most significant epistemological and methodological problem of economic science.

The subjective value theorist who bases his reasoning on the postulate of voluntary choice cannot hope or even wish to predict and control his subject matter as the natural scientist does. He argues that the aims and methods of the social scientist can have little or nothing in common with those of the natural scientist. The voluntarist is also an anti-scientist. He seeks to expose the irrationality and even immorality of the proposal to apply the techniques of the physical sciences to the free human mind.

So the various parts of Knight's social philosophy fit together. Individualistic voluntarism, libertarianism, anti-scientism, are alternative names for a social philosophy derived from a particular view of the relationship between man's free and undetermined will and inert physical nature.

(2) Background and Influences

As Knight conceives the role of the economist, he must, in order to deal relevantly with social problems, be at once a scientist, a moralist and a philosopher. In line with these views, he has brought to the analysis of social and economic problems a broad erudition. He has had training in theology, philosophy, especially ethics, the physical sciences and modern languages, as well as economics.

Knight began his undergraduate education at a Tennessee institution known as American University and went on to another Tennessee school, Milligan College, to receive a Ph.B. degree (1911). He was the son of a clergyman and both these institutions are church affiliated, sponsored by the relatively small Protestant denomination known sometimes as the Disciples of Christ, sometimes simply the Christian Church, or the Church of Christ, and occasionally as Campbellites, after the founder, Alexander Campbell. This denomination, which developed out of a schism within the Presbyterian Church, laid its principal emphasis on faith in the Bible alone. Among Protestant sects, it was particularly active in sponsoring educational institutions, an activity related to their views about the desirability of making direct study of the Scriptures possible for a larger

public. In common with a number of Protestant denominations of the type called "evangelical," there was stress on personal conversion as the highest religious experience, salvation through an individual act of free choice.

Knight was interested in religion, and in addition to a regular undergraduate program, took courses in the divinity school at Milligan. In the further course of his intellectual development, he was to arrive at a secular, humanist social philosophy.¹ As we have noted, this philosophy is based on an ethic of freedom as voluntary choice, and Knight says that "free society is inevitably a secular society, since men will not agree on supernatural truth."² A religious community cannot be organized on the basis of voluntarily agreed upon rules of association. Nevertheless, in spite of his secularism, there is, as we shall see, much in Knight's teaching to remind the reader of nineteenth century theological debates, particularly those about free will and predestination.

After leaving Milligan, Knight took a second undergraduate degree, this time in general science, and a master's degree in German, both at the University of Tennessee (1913).³

1 See Knight, "Liberalism and Christianity," in Baker Brownell (ed), The Economic Order and Religion (1945)

2 Intelligence and Democratic Action, p. 129

3 Several of Knight's essays in economics originally appeared in German. Also, Knight is the translator from German into English of Max Weber's General Economic History (1927).

However, his principal interest at this time seems to have been in philosophy. He was awarded a scholarship to the Sage School of Philosophy of Cornell University, where he planned to take a doctoral degree with a major in ethics and with economics as one of his minors.

It was as a student of economics that he came into contact with Alvin Johnson, later to become the head of the New School for Social Research in New York City. Johnson, at that time on the economics faculty at Cornell, was a student of the distinguished Columbia University economist, John Bates Clark. Johnson has described Knight as one of a select few among the students at Cornell who showed great promise in economics. "Knight came up from Tennessee where border state diet had endowed him with dyspepsia and a graven expression of pessimism."¹ Johnson said he "found Knight the keenest student of theory I had ever had."²

According to Johnson, Knight's transformation from a philosopher into an economist was the result of a misunderstanding between him and his advisers in the Cornell philosophy department. Knight told Johnson of the displeasure his advisers felt toward his attitude and work. Upon inquiry, Johnson was told that they judged Knight as not

1 Pioneer's Progress (1952), p. 227

2 ibid.

"devoid of ability" but cursed with an "ingrained skepticism" which they believed would "destroy the true philosophic spirit wherever he touches it."¹

Johnson was eager to claim for economics any unusual ability such as he felt Knight possessed. He arranged a scholarship in the economics department. Knight then reversed his emphasis, making economics the major and ethics one of the minors in his doctoral program. It was Johnson who suggested Knight's thesis topic, "A Theory of Business Profits." As we shall see, Knight's approach to profit theory is essentially that of Johnson's teacher, Clark.

However, Johnson left Cornell in 1914, and the thesis was completed under the supervision of Allyn A. Young, who² agreed with Johnson's high estimate of Knight's ability. Young's influence on Knight is apparent in Knight's views about the relationship between the classic law of diminishing returns and the so-called "law" of increasing returns to scale. Young had been among the first to point out that these "laws" are not symmetrical.³ The first states a static relationship which holds only under

1 ibid. According to Johnson, the teacher who delivered this judgment on Knight was James E. Creighton, a philosopher in the Hegelian idealist tradition, known chiefly for his Introductory Logic (1898).

2 See Young's review of R.G. Tugwell (ed) The Trend of Economics in Quarterly Journal of Economics (1925). This volume contained Knight's essay, "The Limitations of Scientific Method in Economics." Young commented on the broad philosophical and psychological learning Knight brought to the task of interpreting the logical foundations of economic theory.

3 See Young's review of A. C. Pigou's Wealth and Welfare, Quarterly Journal of Economics (1913).

rigorous "other things equal" conditions. It is a timeless law. On the other hand, the second is a historical generalization concerned with economic progress as a development over time. The two principles therefore belong to different universes of discourse. Knight develops Young's argument in his essay, "Fallacies in the Interpretation of Social Cost" (1924).¹ He uses it in refutation of the contentions of A. C. Pigou and F. D. Graham that under conditions of increasing returns, competition may lead away from rather than toward a social optimum.

While Knight was at Cornell, Herbert J. Davenport came up from the University of Missouri to join the economics faculty, and Knight came in contact with him. One of Davenport's principal concerns as an economic theorist was to expunge from economic theory the notion of income distribution as a tripartite division among laborers, landlords, and capitalists.² Since this elimination also became a principal theme of Knight's economic theory, one sees Davenport's influence in the many passages condemning the tripartite schema.³

Even more significantly one sees in Knight's early writings the influence of Davenport's views about the

1 Reprinted in Ethics of Competition. Knight's argument is discussed below in chapter five.

2 Economics of Enterprise (1913), Chs. XI and XXII

3 Risk, Uncertainty and Profit, especially fn., p. 124, where Davenport's treatment is mentioned as a "conspicuous exception" to the usual treatment of distribution and "excellent for this phase of the question."

necessity for a sharp separation between ethical judgments and scientific analysis. Knight's insistence on the ethical neutrality of the marginalist's concept of "productivity" parallels Davenport's contention that from the economist-as-scientist's point of view, "white-slave exploitation by the procurer, . . . adulteration by the manufacturing druggist, poison-canning by the packers, . . . privilege manipulating by the monopolist--all are productive occupations."¹ That people are willing to pay for these services is the economist's only legitimate test of their status as productive activities. Knight refers approvingly to this passage.² Like Davenport, he argues that monopoly power is "'productive' in the economic or mechanical causality sense." The economist-as-scientist cannot separate this kind from other kinds of "productivities."³ However, as we shall see, Knight's subsequent views imply the necessity for distinguishing "natural" from "contrived" scarcities. In the later writings, he tends to become less emphatic about the possibility or the necessity for maintaining the Davenport separation between factual propositions and ethical judgments.

¹ op.cit., p. 127

² Risk, Uncertainty and Profit, p. 183

³ ibid., p. 186

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Knight's dissertation was completed in 1916. He became an instructor in economics at the University of Chicago in 1917. There the dissertation was rewritten under the editorial supervision of J. M. Clark¹ and published in 1921 under the title, Risk, Uncertainty and Profit, as one of the Hart Schaffner and Marx series of prize essays in economics. It was reprinted in 1933 in the London School of Economics series of reprints of scarce works, reprinted again by the London School in 1940 and 1948, and again in 1957, this time by an American publisher.² The continued demand for the work indicates its enduring influence, a remarkable achievement for a work Knight describes as "a 'masterpiece' in the old sense, by which an apprentice qualified for admission to the gild."³

Risk, Uncertainty and Profit appeared near the beginning of a career that was to include many publications and many honors. He remained at the University of Chicago after his original appointment there in 1917, save for a period from 1919 to 1928 when he joined the faculty at the University of Iowa. He became President of the American Economic Association (1951), and was a recipient of the

1 ibid., preface, p. ix

2 Augustus M. Kelley

3 Risk, Uncertainty and Profit, preface, p. lv

Association's Francis A. Walker med^{al}, awarded only every five years for distinguished work in economics (1957).

In the original preface to Risk, Uncertainty and Profit, Knight says that "the particular technical contribution to the theory of free enterprise which this essay purports to make is a fuller and more careful examination of the role of the entrepreneur or enterpriser, the recognized 'central figure' of the system, and of the forces which fix the remuneration of his special function." (p. ix) Putting the entrepreneur in the center of the analysis of the enterprise system is a principal by-product of the reconstruction of distribution theory. There are really two stages in this reconstruction. One is the analysis of the function of the entrepreneur. Knight's method is to construct in thought a situation in which there would be no occasion for decision making. If there were perfect knowledge of all future events then there would be no choices to make about present activities. Since perfect knowledge so conceived leaves no scope for judgment, deliberation or planning, there would under such conditions be no entrepreneurial function to perform. Thus the entrepreneur is associated with the uncertainty which is the correlate of "real change," that is, change which cannot be analyzed into new permutations and combinations

among unchanging particles, or "the unchanging property of changing in certain ways."¹ The analysis of entrepreneurship requires the economist to take account of the degree of knowledge possessed by the market participants. Therefore Knight's view that the theory of knowledge, including the analysis of probability, plays a fundamental role in economic analysis.

The other stage is the negative one of showing that no economically relevant distinction can be drawn between the broad classes of passive suppliers of productive services. Philip H. Wicksteed, the most distinguished interpreter of the Jevonian theory in England, had attempted this task.² As we have noted, Davenport also stressed the need to eliminate the traditional tripartite classification, and the elimination is a principal theme of Risk, Uncertainty and Profit.³ But Knight came to believe that it could be finally accomplished only after the received capital theory had been thoroughly transformed.

So, in the thirties, he began a series of attacks on the version of capital theory which had become influential in American teaching during the early decades of this century. This was the version of Eugen von Böhm-Bawerk, known

1 Risk, Uncertainty and Profit, p. 313

2 The Co-Ordination of the Laws of Distribution (1894)

3 op.cit., especially pp. 123-9 & 159-73

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as the Austrian theory.¹ This theory was an attempt to extend marginal productivity analysis to the share of the capitalist in the national product by calculating the incremental value of product due to extensions of an average period of production between input and output. The "capitalistic" character of production was a function of this time dimension. Since the theory involved a distinction between the services of the "original factors," land and labor, and those of capital, Knight claimed it perpetuated all the errors of the classic tripartite schema, including the fundamental fallacy, "that only labor was really productive, and that land is a gift of nature."²

Knight's attacks stimulated a considerable controversy during the thirties between critics and supporters of the period of production approach to capital theory.³ The debate raised several questions which have once again become prominent in economic discussion, including such problems as those of quantifying capital.⁴ We shall consider some of these in our subsequent discussion of Knight's capital theory.

In his Presidential Address before the American Economic Association in December of 1950, Knight described how his

¹ The Positive Theory of Capital (1st German Ed., 1889)

² "Capital and Interest," (1946), reprinted in American Economic Association, Readings in the Theory of Income Distribution, p. 390

³ Nicholas Kaldor, "The Recent Controversy on the Theory of Capital," Econometrica (1937), provides a bibliography of these debates.

⁴ See, e.g., Joan Robinson, The Accumulation of Capital (1956), and J. R. Hicks, Capital and Growth (1965)

interest had "of late tended to shift from the problems of economic theory" to more fundamental questions about the contribution of economic and political principles to the discussion of social problems.¹ Of course these fundamental questions have always been near the center of Knight's interests. Even the explanation of entrepreneurial activity is dealt with by Knight in the form of a methodological analysis of orthodox competitive price theory. But it is true that in recent years he has tended to discuss the methodological and ethical significance of economic principles more and to give less attention to technical refinements in economic theory. At the time of his retirement from full time teaching he was Morton D. Hull Distinguished Service Professor of Social Sciences and Philosophy at the University of Chicago, a title he retains as professor emeritus. This title indicates the broad spectrum of his interests, which includes much more than technical economic theory.

This study of Knight's ideas takes the theory of voluntary choice as the foundation of his social philosophy and analyzes its consequences for his economic methodology, his technical economic theory and his views about the significance of economic science for social action.

1 "The Role of Principles," op.cit., p. 252

TWOTHE CREATIVE MIND: A HISTORICAL REVIEW(1) Individualism, Active and Passive

Knight's central problem concerning the freely choosing individual mind took the form in which it presents itself to modern thought in the intellectual atmosphere of the seventeenth century's scientific revolution. In place of a world of qualitative diversity, filled with life and color, with evidence everywhere of purposes and ideals, Newtonian science had revealed a universe of quantitative variation only. There were those who found it colorless and dead. What role did it allow for man's creative mind?¹ During the nineteenth century, this problem of the relation of man's spiritual existence to materialist science became even more acute as a consequence of Darwin's theory of evolution. For this made human nature continuous with lower forms of animal life, and so stimulated endless discussion and debate among social scientists, philosophers, theologians and moralists. One type of response to this situa-

¹ Blaise Pascal's Pensées (1670) distinguished the "geometric spirit" from the "intuitive spirit," and claimed that man had a spiritual existence which eluded understanding by the former "spirit."

tion was a vigorous affirmation of the autonomy of the human mind, and an assertion of its exemption from the deterministic laws of the natural scientist. William James and Henri Bergson were among the most eloquent of those who defended man's free will from scientific determinism. These philosopher-psychologists had a significant influence on Knight. We are concerned to point out how James's psychology offers two alternative, doubtfully consistent ways of taking account of the creative mind. Our study of Knight's ideas is essentially a comparison of two interpretations of the active character of thought, and how they lead to contrasting views of the nature of economic science and its relevance to action.

* * * * *

Knight's method for giving emphasis to man's autonomous mind is through elaboration of a radical dualism between the subject and the object in the knowledge relationship. Looking outward, the knowing subject observes behavior that is caused. Turning inward, he is aware of conduct that is motivated. He exists simultaneously in two departments, representing two non-comparable levels of existence. In one of these there are repetitive mechanical processes, governed by immutable laws of nature. In the other, there are novelties and unpredictable changes. Only in the latter department can activity be free.

This dualism is expressed in Knight's basic dichotomy between process and procedure. He defines procedure as a "manifestation of activity, in contrast with 'process', which is passive, mechanical--positive in the Comtian sense. Activity is an attribute of a purposive individual, a subject, or self."¹ The problems of the social scientist are mainly due to the fact that his subject matter is engaged in procedural activity. "The root of the difficulty is that we know, and are interested in man, in contrast with 'nature', not merely or primarily as known and acted upon, but also especially as knowing and acting."² The fact that purposive activity takes the form of solving problems means that it is in principle unpredictable, and so radically distinct from the causal sequences with which the natural scientist is concerned. "Activity is problem-solving, which is the primary ultimate or undefinable reality of thinking in general; . . . the solution of a problem cannot be predicted in advance of the 'activity' of solving it (and the sequence of events in the solution is also unpredictable) and when the solution is found it is no longer a problem."³

1 "Science, Philosophy and Social Procedure" (1942), reprinted in Freedom and Reform, p. 205. Auguste Comte spoke of a law of the development of human intelligence through three methods of philosophizing, the theological, the metaphysical and the positive methods. In the theological stage, the mind supposes all phenomena to be produced by the immediate action of supernatural beings; in the metaphysical, the mind looks for abstract forces to act as causes; in the positive, the mind looks for "invariable relations of succession and resemblance." The System of Positive Philosophy (1831-42), Introduction.

2 "Fact and Value in Social Science" (1942), reprinted in Freedom and Reform, p. 230.

3 "Science, Philosophy and Social Procedure," op.cit., p. 205.

The process-procedure dichotomy yields a series of subsidiary dualisms--between mind and body, fact and value, the individual and the social, free will and coercion, knowledge which is perfect and that subject to uncertainty, incomes which are costs and those that are profits. The elaboration of these dualisms forms the main content of Knight's teaching.

* * * * *

We shall argue that the problem of the dual existences stated in Knight's process-procedure dichotomy grows out of conflicting tendencies in the social philosophy of modern individualism. On the one hand, a society has developed in Western Europe and America in the period since the seventeenth century that has placed high value on the spontaneity and creativity of the individual mind. On the other, its social philosophers have sought to rationalize free institutions with a theory that seems to deny that the mind has any creative faculties. Instead, mental activities are described in terms of sensations or ideas for which the mind can serve merely as a passive receptacle.

Cultural anthropologists have commented on the strikingly different attitude toward the individual person in the traditional, pre-literate, "closed" society as compared with

1 Franz Boaz, The Mind of Primitive Man, Rev. Ed. (1938), Ch. XII.

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his situation in the modern "open" society. The units that constitute the larger social collective are not individuals but families, clans, tribes. The particular persons who are members of these groups have an inferior, transient existence; they attain true being only inasmuch as they are successfully incorporated into the group. The value of the person depends on how effectively the body of customs and traditions are expressed in his activities and therefore on the degree of his assimilation into the group. The emphasis is on conformity. Originality and inventiveness are looked on as dangerous and disruptive. "When tradition is a matter of the spoken word, the advantage is all on the side of age,"² for it is the elders who can speak authoritativelyⁿⁱ about what is the customary mode of behavior.

In any society, men seek to validate their beliefs by testing their correspondence with "reality," but what is understood by the real differs according to the cultural pattern. Where the artist and the artisan attempt to conform to customary patterns rather than to create new ones, patterns and relations are conceived as belonging to the order of nature, having an existence equally as real as the particulars they relate. Thus, the habits of thought fostered by life in the closed society are likely to give wholes

1 For the contrast between the open and the closed society, see Henri Bergson, The Two Sources of Morality and Religion, chapter one.

2 A. A. Goldenweiser, Early Civilization (1922), p. 408.

a higher reality than their parts. Kinds would be more real than the particular objects and events which are their members. One would explain the tree's existence by its contribution to making up the forest rather than account¹ for the forest as a mere aggregate of individual trees.

The reversal of the relative valuation of the individual and the group which marks the transition to the modern open society is correlated with a changed attitude toward the creative mind. The unique individual is less likely to be regarded as the undesirable deviant. Instead of being associated with subversion and error, he may be looked on as the innovator who furnishes the ideas on which the progress of the community depends. Correctness in the sense of perfect conformity is no longer the ideal. Respect is paid to originality.

The attitude toward originality and genius that characterizes the open society is brought out by contrast with the attitude that prevailed in antiquity and the middle ages. The signed work of art that grows out of the unique vision of the artist does not have so much significance in these earlier periods. The Book of Job and the Cathedral of Chartres are among the world's great artistic

¹ Cf. Boaz, op.cit., p. 225

achievements, but no one knows who created them. Art is an expression of the moral values or the religious experience of the community rather than the inspired vision of the rare genius.

The philosopher, Charles Sanders Peirce, founder of American Pragmatism, noted the difference in the medieval attitude toward originality in scholarship as compared with the modern attitude. "Nothing is more striking in . . . the great intellectual products of that age [the medieval period] than the complete absence of self-conceit on the part of the artist or philosopher. That anything of value can be added to his sacred and catholic work by its having the smack of individuality about it, is what he has never conceived. His work is not designed to embody his ideas, but the universal truth; there will not be one thing in it however minute, for which you will not find that he has his authority; and whatever originality emerges is of that inborn kind which so saturates a man that he cannot himself perceive it."¹

In contrast to this self-effacing attitude, the philosophers and scientists who usher in the modern period in the seventeenth century are virtually unanimous in their insistence on their rejection of traditional ideas and on the originality of their thought. The "chief cause of our

¹ "Critical Review of Berkley's Idealism" (1871), reprinted in P. Wiener (ed), Values in a Universe of Chance, p. 78

errors," wrote Rene Descartes, "is to be found in the prejudices of our childhood," yet we have difficulty in expunging them from memory, "and, so long as they remain there, they give rise to various errors."¹

But the seventeenth century presents this apparent paradox. It has been called "the century of genius." During the succeeding more than two centuries up to our own time, "the intellectual life of the European races" has subsisted "upon the accumulated capital of ideas provided for them by the genius of the seventeenth century." The century contained all or parts of the careers of Shakespeare and Cervantes, of "Francis Bacon, Harvey, Kepler, Galileo, Descartes, Pascal, Huyghens, Boyle, Newton, Locke, Spinoza, Leibniz," so that there "simply was not time for the century to space out nicely its notable events concerning men of genius."² Yet this same century handed down to posterity a theory of mind, one we associate especially with John Locke, that made of mind a passive spectator, a tabula rasa to be written on by a series of sensations or impressions it could experience but not create. How could the men of the seventeenth century, surrounded by the evidence of genius, find reasonable a theory that implicitly

1 Principles of Philosophy, Sect. lxxii

2 Alfred North Whitehead, Science in the Modern World, p. 42

denied the mind's creativity? How could they say, "I make no hypotheses," even as they demonstrated the extraordinary power of the hypothetical method?¹

A plausible explanation of the paradox is provided by taking account of the essentially negative function the theory of mind was designed to serve. The men of the Enlightenment of the seventeenth and eighteenth centuries were believers in the perfectibility of man, once the unlimited potentialities of human reason had been released. But before reason could be enthroned it was necessary to end the dominion of superstition and outmoded custom, to be rid of "the rubble of the ages." Locke said his office was that of "clearing away some of the rubbish that lies in the way of knowledge."²

What was required was to expose the error embodied in archaic institutions. The recommended procedure was to turn the glare of reason on the so-called "innate ideas" felt to be the support of tradition and arbitrary authority. Only ideas tested by observation were to count as valid knowledge. By observation was meant a direct, personal contact with the objects of nature through the senses. So the individual mind, inspired with the courage to know, to

1 Cf. Sir Isaac Newton, The Mathematical Principles of Natural Philosophy (Motte translation), II, p. 314

2 Essay Concerning Human Understanding (1690), Epistle to the Reader.

give unprejudiced reexamination to accepted beliefs, was placed in opposition to obstructive institutions. The philosopher Immanuel Kant described the spirit of the Enlightenment in this way:

Enlightenment is man's exodus from his self-incurred tutelage. Tutelage is the inability to use one's understanding without the guidance of another person. This tutelage is self-incurred if its cause lies not in any weakness of the understanding, but in indecision and lack of courage to use the mind without the guidance of another. "Dare to know" (sapere aude)! Have the courage to use your own understanding; this is the motto of the Enlightenment. ¹

If individual experience, subject to observation, was to perform its liberating function, certain conditions had to be imposed on its character. It must be reducible to simple, elementary units, capable of providing clear and unambiguous indications to any mind that "dared to know." The complex and novel were explained when they were shown to be only new arrangements of unchanging elements. The medieval scholars defined concepts by subsuming them under a class (next genus above) and then showing the "specific difference" from other members. But in the seventeenth century, the "causal definition" signified a new ideal of knowledge. ² One understood only when he was able to

¹ "What Is Enlightenment?" (1784), reprinted in Crane Britton (ed), The Age of Reason Reader, p. 298

² Ernst Cassirer, The Philosophy of the Enlightenment, p. 254

analyze a complex whole into its constituent parts, and then reconstruct it from these. "Where there is no generation . . . there no philosophy is perceived."¹

The individualist conception of mind is thus logically bound up with atomism, or methodological individualism. One understands a machine, a political state, or a solar system only when he has analyzed these phenomena into their ultimate component elements. For any field to be brought within science, one must identify the immediately known particulars which were to provide the content of axioms to be deductively elaborated within a system analogous to Euclid's geometry. This was in accordance with Newton's interpretation of scientific method, "that Nature may be lasting, the changes of corporeal things are to be placed only in the various separations and new associations and motions of these permanent particles."²

In place of authority and tradition, individual experience becomes the arbiter of belief. Experience is made up of a succession of discrete sensations, and forms the material of all thought, "nothing in the intellect which was not first in sense." All the mind can directly know are its own sensations, but for empirical knowledge to be

1 Hobbes, De corpore, I, Ch. I, sec. 1., quoted, ibid.

2 Opticks, p. 376

possible, these must be constrained by external objects outside the mind, existing independently of thought. The mind and the objects of knowledge belong to different levels of being. The influence of external objects on thought is coercive. True knowledge is that to which the mind contributes nothing. Any originative function on the part of mind is a source of error. The mind must be a passive spectator.

Methodological individualism goes along with nominalism, the doctrine that all general ideas expressing kinds or relations are mere names or fictions. We must regard as real only the particulars which we classify or relate. Individuals make up the whole reality of the general idea. When we have an idea or a perception, it must always be of a specific object. We can see a man, but not manhood; a red house, but not redness; a triangle drawn on a blackboard, but not triangularity. General expressions are names which make possible the organization and classification of empirical data that exist prior to their naming. John Stuart Mill states the nominalist position in this way: "It is a sound maxim . . . that error lurks in generalities; that the human mind is not capable of embracing a complex whole, until it has surveyed and catalogued the parts of which the whole is made up; that abstractions are not realities per se,"

but an abridged mode of expressing facts; and that the only practical mode of dealing with them is to trace them back to the facts (whether of experience or of consciousness) of which they are the expression."¹

The habits of thought formed in the open society, where there is a reversal of the closed society's relative valuation of the individual and the collective, are congenial to the idea of reality as made up of unchanging atoms. Methodological individualism and nominalism have their origin in a noble effort to clear away the "rubble of the ages," to allow space for the free expression of the creative mind. But they have the paradoxical effect of denying the mind's creative powers. For they convert the conceptual element in knowledge to a mere fiction and make of the mind a passive spectator. Moreover, they make new knowledge inexplicable, for we can explain the new only through translation into what is already known. Therefore the contradiction which is our theme in this chapter. Individualism as a philosophy of the creative mind is inconsistent with the conception of mind as individual. The sensationalist empiricism of Locke and his successors was intended to promote the Enlightenment's program for progress based on its vision of man's perfectability, though, taken literally, it was inconsistent with these ideals, for it denied the creative

1 "Bentham," in Marshall Cohen (ed), The Philosophy of John Stuart Mill, p. 12

power of thought.

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According to the individualist conception of mind, knowledge derives from impressions which come from the external environment and impinge upon the sensory. But the mind also has an immediate awareness of its own conscious processes. The relationship between the two kinds of knowledge is brought out by considering the motive-force analogy. This analogy figures prominently in eighteenth and nineteenth century debates about the nature of empirical knowledge. It is important for our purposes because Knight makes use of it in presenting his ideas about the logical foundations of economic theory.

To the eighteenth and nineteenth centuries this analogy posed a profound metaphysical problem. It was stated most effectively by David Hume in his criticism of the concept of causation as an agency or power capable of producing "motions and variations of body." "That there is nothing in any object, consider'd by itself, which can afford us a reason for drawing a conclusion beyond it; and That even after the observation of the frequent or constant conjunction of objects, we have no reason to draw any inference concerning any object beyond those of which we have had experience." Therefore if the idea of cause means more than observed frequent or constant conjunction, it cannot be vali-

¹ A Treatise of Human Nature, Part II, Sec. XXI, "Of the Probability of Causes."

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dated by experience, the source of all true knowledge.

Seventeenth century science purported to explain motion in physical nature in terms of interactions between physical objects. The aim of modern science was the elimination of animistic or anthropomorphic elements from one's account of the course of events in inert nature. But would not this task remain incomplete as long as the idea of force as dynamic agent remained within science? The idea of force or cause suggests effort or purpose. When we speak of forces acting or one event causing another, are we not imputing to observed events in physical nature the introspected experience of our voluntary acts?

One answer to such questions as these was the assertion that it was necessary to retain within science the idea of physical forces as analogues of human volition. Otherwise, the scientist would be confined to describing how interactions take place, but he was barred from explaining why. Explanation was not psychologically satisfying until it went beyond mere description. Our human way of understanding was through analogy to our own introspected conscious experience.

This line of reasoning was attacked by Hume. He argued that we did not understand how our wills moved our bodily organs any better than we understand the forces at work in inanimate nature. "So far from perceiving the connection

betwixt an act of volition, and a motion of the body,
'tis allow'd that no effect is more inexplicable . . .
Since, therefore, matter is confess'd by philosophers to
operate by an unknown force, we shou'd in vain hope to
attain an idea of force by consulting our own minds."¹

The Humean criticism stimulated attempts to elimin-
ate force, conceived as a dynamic agent, from theoretical
mechanics. This continued to be an important preoccupation
throughout the nineteenth century. The attempted elimina-
tion took two forms. Some scientists believed that the
task of removing animistic elements was essentially a mat-
ter of replacing the Newtonian force of gravity, action-at-
a-distance, with action-by-contact. Much ingenuity went
into this endeavor.² Indeed, Newton himself had looked
forward to such a reformulation. He had, in a celebrated
passage, deplored the "absurdity" of action-at-a-distance.

Why explanation in terms of action-by-contact should
be more "understandable" or "satisfying" than one in terms
of action-at-a-distance is a question in social psychology.
Earlier we discussed the relationship of the "reality" to
which one referred in validating beliefs to the "habits of
thought" developed in the particular institutional setting.

1 ibid., Sec. XII

2 Max Jammer, Concepts of Force (1957), Ch. 10

An interesting hypothesis about the preference for explanation in terms of action-by-contact was offered by a student of culture patterns, Thorstein Veblen. He said this preference was a preconception reflecting institutions of the age of craftsmanship. The craftsman uses his tools to manipulate objects. He "causes" events to occur when he impells objects this way or that by physical contact. Therefore the preconception that explanation was incomplete until one found an "efficient cause" which operated by mechanical continuity solely.

Veblen held that in "the mathematical formulations of mechanical phenomena . . . the assumption of concomitance or sequence at a distance will fill the requirements of the formula quite as convincingly and commonly more simply than the assumption of concomitance by contact only." The preconception was responsible for the promulgation of "tortuous theories of gravitation," which invoked such a "prodigy of incongruous intangibilities as the ether,--a rigid and imponderable fluid."¹ Veblen suggested that another metaphysical postulate was more appropriate to an age dominated by the technology of the machine industry.²

¹ Instinct of Workmanship (1914), pp. 335-6

² Jammer, op.cit., Ch. 10, comments on the proliferation of theories designed to bring gravitation under the principle of action-by-contact: "Their common feature . . . is the introduction of hypotheses ad hoc, whether as to the structure of matter and the ether, or as to complicated undulatory motions of the ether particles. These theories . . . propose many conceptions that . . . defy all experimental verification because they are devoid of epistemic correlations." (p. 197) Epistemic correlations are rules for relating theoretical notions to data of empirical observation.

The other way was to propose treating force as a primitive or irreducible or a relational concept, implicitly defined within the system of theoretical mechanics, but having no explicit definition outside the system. This is in line with most current interpretations of theoretical mechanics. As shall be argued, it means substituting a view of the scientist's activity as the discovery of functional relationships rather than a search for efficient causes. But most of those who proposed the relational concept of force, during the later nineteenth century, did not formulate their proposal in this way.

Instead, they suggested viewing the laws of theoretical mechanics as pure descriptions of observed uniformities and sequences. Rather than the vague and ambiguous goal of "understanding" nature, they proposed that the scientist limit himself to dispassionately describing nature. "I hope," said Ernst Mach, "that the science of the future will discard the idea of cause and effect, . . . these ideas contain a strong tincture of fetishism, . . ." ¹ A "complete theory" is one in which "to all the details of the phenomena details of the hypothesis must correspond . . ." ² Force was merely a mathematical expression for a relationship

1 Popular Science Lectures (trans. T. J. McCormack, 1943), p. 254

2 History and Root of the Principle of the Conservation of Energy (Chicago, 1911, published in German, 1872)

between physical bodies. Henri Poincaré called it a convention, a symbolic notion that was convenient for organizing our ideas.¹

Natural corollaries of these ideas of the scientist's function were the doctrines of physicalism or phenomenalism, which hold that all our scientific knowledge must be translatable into propositions about physical objects or our sensory impressions of them. To attempt to get beyond these was inevitably to become involved with the occult. "Beyond the sense impressions, beyond the brain terminals of the sensory nerve, we cannot get," wrote Karl Pearson.²

"The notion of force as that which necessitates certain changes or sequences of motion is a ghost of the old spiritualism."³

Phenomenalism like that of Pearson and Poincaré was criticized by Peirce. While he believed they were correct in maintaining that a hypothesis is admissible if it is "capable of experimental verification, and only in so far as it is capable of such verification,"⁴ they had a distorted idea of what is meant by verification. The condition of verifiability did not entail that one's hypotheses must be expressed in statements containing no nouns which do not

¹ The Foundations of Science, p. 104. This is a translation by G. B. Halsted of La science et l'Hypothèse (1902).

² Grammar of Science (1892), p. 60

³ ibid., p. 104

⁴ "Essentials of Pragmatism," J. Buchler (ed) Philosophical Writings of Peirce, p. 267

signify observable objects. Would an archeologist who discovered arms and utensils in the excavations of an ancient city be forbidden to hypothesize they were once made or used by human beings, since no such beings could ever be directly observed? The "first impressions of sense" into which the phenomenologists proposed translating all true propositions were not the objects of immediate awareness, but theoretical constructions which played a mediate role in inquiry, "what they call bad or fictitious, or subjective, the intellectual part of our knowledge, comprises all that is valuable on its own account, while what they mark good, or real, or objective, is nothing but the pretty vessel that carries the precious thought."¹ Phenomenalism, and in fact any individualist conception of cognition, was inconsistent with the active character of thought, the creative mind.

However, a more usual criticism of the phenomenologist account of force as purely relational attempted to revive the idea of force as a dynamic agent. T. H. Huxley defended the doctrine that we are able to perceive objects only by attributing to them qualities of consciousness, known to us through introspection of our own inner life.² Force as

1 ibid., p. 268

2 Essays upon Some Controverted Questions (1892), p. 302

analogous to will is not an observed fact, but is a presupposition of observation. This is evidently a proposition in the psychology of perception rather than the logic of scientific method. However, Huxley's view impressed Knight. It is the main basis of his contention that there are uneliminatable animistic elements in science, in spite of several centuries of zealous endeavor by positivist scientists to get rid of them. As we shall see, this contention plays an important role in his analysis of the logical foundations of economic theory.

* * * * *

It was possible to overlook the contradiction between individualism as a philosophy dedicated to the liberation of the creative mind, and the theory of mind as individual, so long as the latter was confined in its applications to the problem of exposing error, clearing away rubbish. Difficulties mounted when its employment was shifted to the positive function of providing a guide for moral decisions or the development of a program of social action. James Mill's Analysis of the Phenomena of the Human Mind (1829) presented a psychology derived from Hume, which Mill intended as the foundation of a new morality and a new pedagogy. The psychology of the association of ideas which he elaborated is the individualist theory of mind turned on mind itself. All the intellectual and volitional activities of the mind

are ruled by the laws of association. The whole of mental life can be reduced to a collection of discontinuous sensations. Even one's feeling of muscular effort and of continuous movement, as when he walks across a room, is in reality a succession of discrete sensations, "the antecedent states are in each instance united with the present by memory, and by the amount of the states, thus, united, the amount of motion is computed." (Vol. II, Ch. XIV, Sec. VI). Complex ideas are formed through association¹ by contiguity or similarity of the elementary sensations. James Mill's psychology is the product of a consistent application of Newton's method to man's mental and emotional experience.

Bentham erected his scientific morality on the foundation of the psychology to which James Mill gave exposition. Most sensations are "indifferent," but some are painful, others pleasurable. Action follows upon a calculation of the net balance of pleasure over pain. Put this theory of action into the imperative and one has the hedonist morality: "so act as to maximize pleasure and minimize pain."

¹ James Mill was concerned to show how association by similarity could be translated into association by contiguity, because the former required activity on the part of mind, in recalling past events to be associated with present ones. Only if the association by similarity can be reduced to contiguity can the principle of the simplicity of the laws of nature be upheld, and this principle must be upheld if we are to sustain our faith that truth will be revealed to the inquiring mind. (Vol. I, Ch. XI)

But whatever Bentham's intentions, his calculus is logically inconsistent with the creative mind, and even with the moral life. The deliberations of a moral agent are converted into the calculations of a creature who responds but does not act. John Stuart Mill sought to develop and improve the doctrines of his father and Bentham, yet he pointed out the inadequacy of their psychology for moral theory. Instead of indicating how the individual can make his moral decisions the expressions of a nobler character, it in effect eliminated all decision from moral life. "There is no need to expiate on the deficiencies of a system of ethics which does not pretend to aid individuals in the formation of their own character . . . "¹

However, Bentham's principal interest was not in personal morality but in political reform.² His felicific calculus was designed primarily as a guide to the statesman in reconstructing laws and institutions. A reform was to be made if the calculated excess of pleasure over pain was positive. In the calculation each citizen was to count as one and only one. This is the sense in which Bentham's political theory is individualistic. It suggests the idea of individuality as equality. But it is doubtfully consistent with the more fundamental meaning of individualism as the liberation of creative minds. Analogous to the way the individualist conception of mind can lead to the elimination

1 op.cit., p. 30

2 ibid., p. 31

of the active role of the inquirer, Bentham's theory of social reform tends to render redundant the active participation of the citizenry in the political process. There is no reason for the awkward processes of "government by discussion" if the desirable course of social change can be made a matter of the statesman's calculations. The felicific calculus has authoritarian implications. In fact Bentham at one stage of his career indicated an admiration for absolute monarchies, such as that of Catherine the Great, because of their superior efficiency in instituting reforms.¹

During the later nineteenth century, an even more influential formulation of the individualist psychology was that of Herbert Spencer. He used it as the foundation of a science, held to be positive and practical, but rationalizing social inaction, a policy of laissez faire, rather than a positive role for government in bringing about reform.² He combined the associationist psychology, the methodological individualism and nominalism of the seventeenth and eighteenth centuries with the biological evolutionary theory of the nineteenth. The result was an alleged integration of all knowledge around a principle of evolution. Spencer held that throughout the universe one found the evolutionary

1 Elie Halévy, The Growth of Philosophical Radicalism, Vol. I, p. 150

2 Social Statics (1851), Introduction

process at work. "The changes everywhere going on, from those which are slowly altering the structure of our galaxy down to those which constitute a chemical decomposition, are changes in the relative position of component parts; and everywhere necessarily imply that along with a new arrangement of Matter there has arisen a new arrangement of Motion. Hence it follows that there must be a law of the concomitant re-distribution of Matter and Motion which holds of every change, and which, by thus unifying all changes, must be the basis of a Philosophy."¹

The same laws of "changes in the relative position of component parts" are exemplified throughout the cosmos, "by the formation of celestial bodies, by the moulding of the Earth's crust, by organic modifications, by the establishment of mental distinctions, by the genesis of social divisions."² Psychological science he believed should be organized about the idea that "something of the same order as that which we call a nervous shock is the ultimate unit of consciousness; and that all the unlikenesses among our feelings result from unlike modes of integration of this ultimate unit."³

1 First Principles (1862), Sec. 186

2 ibid., Sec. 188

3 Principles of Psychology, Sec. 60

The universal evolutionary law also applied to society. At the end of any process of integration there is "equilibration." In animal bodies this is followed by disintegration, death and decay. But for society equilibration means the establishment of a state of harmony. The final evolutionary state "in which the extremest multiformity and most complex moving equilibrium are established, must be one implying the highest state of humanity."¹

Spencer's "practical" social science had as its purpose exposure of the evil of any policy designed to interfere with the beneficent law of social evolution. The purpose of the social scientist should be not reform but demonstration of the impossibility of effective reform.

Spencer's laissez faire social philosophy provides another meaning of individualism. It is individualist in that it places the individual in opposition to the state. But it also is doubtfully consistent with the fundamental meaning which associates individualism with creativity. Spencer's proposal to free individuals from political control does not seem to increase their opportunity for creative expression. Rather, the case for political freedom is based

1 First Principles, Sec. 189

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 on the desirability of allowing inexorable laws of history
 to run their course unhindered.¹

* * * * *

Our survey has yielded several ideas of individualism. The primary meaning of the term in the open society identifies it with the creative mind. But for historical reasons individualism as a social philosophy went along with methodological individualism as a principle governing inquiry. It turns out that these two kinds of individualism are inconsistent because methodological individualism converts the mind into a passive spectator. Therefore the conflict between two views of the mind, a conflict to some extent concealed as long as methodological individualism was employed for purely negative purposes. Attempts to use it for constructive rather than destructive ends produced the Benthamite calculus and the Spencerian laws of progress. The first of these gave individualism as a social philosophy the meaning of equality, the latter the meaning of laissez faire. Both implicitly deny the creative mind.

1 Cf. Thorstein Veblen, "The Preconceptions of Economics" III, The Place of Science in Modern Civilisation, p. 157. Veblen points out the logical relationship between society's conformity to laws of historical progress, and the view of the mind as passive. "The doctrine of a trend in events imputes purpose to the sequence of events . . . But discretion touching a given end must be single . . . Therefore, no discretion resides in the intermediate term through which the end is worked out . . . discretion cannot be imputed to [man] without violating the supposition . . . [of] an indefeasible meliorative trend in events." (ibid.)

* * * * *

Knighthian libertarianism or anti-scientism is to be understood within our present frame of reference as one of the attempts to restore the creative mind to its rightful position. It is an affirmation of the originative power of thought, a protest against the mechanization of mind.

Historically, libertarianism belongs to a late nineteenth century "revolt against mechanism" which affected almost all fields of knowledge. Mechanistic determinism in its Spencerian form had been especially influential in post-Civil War America. John Dewey testifies to a change in the intellectual climate when, describing his own philosophical development, he writes of the eighties and nineties as times of new ferment in thought with "the reaction against atomic individualism and sensationalist empiricism in full swing."¹ In the eighties, William James wrote of a turn to German Idealism by British and American philosophers. Though Hegelianism was "defunct on its native soil," it had become "one of the most powerful influences of the time in the higher walks of life" in England and the United States. James described it as "a movement of reaction against the traditional British empiricism," and said he believed the movement represented "expansion and freedom, and is doing service of a certain kind."²

1 "From Absolutism to Experimentalism," Adams and Montague (ed) Contemporary American Philosophy (1930)

2 "On Some Hegelisms," The Will to Believe, p. 263

What the times called for was a philosophy that allowed ample scope to the working of the autonomous individual mind without attempting to deny the achievements of materialist science. The natural response was a bifurcation of existence. The dualism between the mental and the physical was reaffirmed with emphasis. But the inner life was not a mere matter of adjustment of the "inner" to the "outer" relations, as in Spencer's theory of mental life. On the contrary, the inner realm was given a life of its own. It was held to be far richer and more complex than the Spencerian explanatory schema could handle. One sees evidence of this emphasis on the complexity of consciousness in such diverse fields as science, philosophy, art and literature.

* * * * *

The rescue of the autonomous individual mind from mechanistic determinism provides the cultural background for the reinterpretation, by some of the more philosophical among its advocates, of the subjective value theory of Jevons. There was concern to show that one could be a marginalist in economic theory without becoming committed

1 During the nineties, the psychologists discovered the unconscious with its implication of obscure and highly complicated patterns of motivation. In poetry, there were the symbolists; in painting, the impressionists. Both these are reactions to the mid-century's realistic art, which made the artist subservient to nature rather than true to his own unique vision of it.

as a human being to a view of mind as a mere mechanism. Wicksteed's methodological writings are typical of this development. He attempted to show that the subjective value theory was independent of the hedonist psychology² from which Jevons claimed to have derived it. Though he maintained that the "ultimate laws of economic conduct" were "psychological," he did not mean by this that economists needed to "make a selection of motives and aims" that were specifically economic. The marginal principle or the "law of differential significance" was simply the form of all purposive conduct. The "discovery of the principle of marginal utility," and the Wicksteed type of interpretation of it as independent^{ent} of hedonism or any particular theory of motivation has been held to constitute a "revolution" in economic thought, opening the way to a new conception of the nature of society.³ By removing the ends of action from the scientific analysis one affirmed the voluntary character of choice.

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1 Wesley C. Mitchell, "The Role of Money in Economic Theory," The Backward Art of Spending Money, discusses the anxiety orthodox economists felt, near the turn of the century, "to free their terminology from hedonist implications." (p. 155)

2 "The Scope and Method of Political Economy," (1914), reprinted in Common Sense of Political Economy (1933 reprint). In the introduction to this reprint, Lionel Robbins, like Knight an interpreter of the subjective value theory, claims as Wicksteed's greatest achievement that he shattered "the misconception . . . that . . . Economics depends upon the assumption of economic men, each actuated by . . . hedonistic motives."

3 See Talcott Parsons, The Structure of Social Action, p.5

The context of Knight's exposition of subjective value theory and its methodological interpretation is this transition from "positivism" to "voluntarism." He is one of the purifiers of economic theory. He launches the attack on hedonist or materialist elements from a philosophical position established during this turn of the century "revolt against mechanism." Let us consider the nature of the influence from philosophy.

(2) Pluralism and Continuity: Two Kinds of Pragmatism

We wish to indicate the nature of Knight's intellectual debt to the teachings of William James and Henri Bergson. We are especially concerned to point out an ambivalence about James's views which made it possible for him to act as progenitor of two radically different interpretations of the creative mind and its relationship to empirical science. In our subsequent discussion we shall adopt the terms pluralism and continuity to identify these two concepts of mind. The theme of our study is the contrast in the ideas of the nature of economic science suggested by these two interpretations.

Knight fully acknowledges his obligation to Bergson and James. He refers his readers to their writings for the working out "along what the writer considers the correct lines" of the philosophical implications of his analysis of economic motivation.¹ Both Bergson and James preceded Knight in the use of the term scientism in a deprecatory sense. They sought to protect the emotional, intuitive, non-rational aspects of experience against encroachments of a cold and heartless intellectualism. When Knight was a student of philosophy in the early years of this century, these defenses were at the height of their influence.

1 "Economic Psychology," op.cit., p. 97

As Knight wrote, "It has become . . . the fashion, especially since Bergson came into vogue, to be irrationalistic, and question the validity of logical processes." And he went on to say that "there is much ground for this position . . . "

The Knightian dichotomy between process and procedure can be recognized as a variation on the same theme as Bergson's contrast between intellect and intuition,² and James's contrast between intellectualism and pure experience.³ All three of these dichotomies are designed to dramatize the active character of thought through a contrast between the creative powers of the mind and the blindly determined processes of inert nature.

From Bergson Knight takes the idea of "creative evolution," the unpredictable character of any response which involves what both Bergson and Knight call "real change." "If we put the possible back into its proper place, evolution becomes something quite different from realization of a program: the gates of the future open wide; freedom is offered an unlimited field . . . continuous creation of unforeseeable novelty . . . "

1 Risk, Uncertainty and Profit, p. 209

2 Time and Free Will (1910) and other writings.

3 A Pluralistic Universe (1909)

4 "The Possible and the Real," The Creative Mind, pp. 103-4

Bergson's philosophy is based on an analysis of time as real duration ("durée réelle"), held to be outside the scope of science, or intellect, which has insight into the measurable properties of objects in extended space. "I saw, to my great astonishment, that scientific time does not endure, that it would involve no change in our scientific knowledge if the totality of the real were unfolded all at once, instantaneously, and that positive science consists essentially in the elimination of duration."¹ Intellect is the basis of man's instrumental rationality. It gives him control over the physical environment. Intellect is pragmatic. But man's purposive activity is located in real time. One gains insight into man as purposive actor only when he turns away from intellect and trains his powers of intuition. "The intuition we refer to . . . bears above all on internal duration . . . the indivisible and therefore substantial continuity of the flow of the inner life."² As Knight says, the "fundamental fact in the way of a science of human nature" is this indivisibility and continuity of the flow of consciousness through "real time." "The phenomenon is variously designated as associative memory, or mnemism; or on the lowest plane, the conditioned response; or on the highest

1 Letter to William James, May 9, 1908, printed in Ralph Barton Perry, The Thought and Character of William James, p. 348.

2 The Creative Mind, p. 32

plane by saying the individual reacts not to the object as such but to what it means to him. Or in Bergson's more picturesque phrase, the animal carries its past with it into the future in a cumulative process of growth."¹

As we shall see, Knight's economic man Crusoe is a hypothetical individual who lives exclusively by Bergsonian intellect. The economic man is a pragmatic, instrumentally rational being without moral, aesthetic or social interests. These latter are inaccessible to intellect, they can be approached only through intuition.

The treatment of uncertainty and error in Knight's system owes much to Bergson. Intellect is confined to rigorously static situations. If there is "real change," intellect must yield to intuition. The application of rational methods to any subject matter requires the analyst, as a first step, to abstract from the uncertainty and error which are the correlates of "creative evolution."

* * * * *

From James, Knight takes the idea of pluralism, as James uses this term in works such as his The Will to Believe, Pragmatism, and A Pluralistic Universe. The pluralist is one who believes in coexisting but alternative and

¹ "The Limitations of Scientific Method in Economics," (1924), reprinted in Ethics of Competition, p. 130. This entire essay shows Bergson's influence. It is most accurately described as an application of Bergson's philosophy to an interpretation of economic theory.

even contradictory truths. "I, for one, feel as free to try conceptions of moral as of mechanical or of logical rationality. If a certain formula expressing the nature of the world violates my moral demand, I shall feel as free to throw it overboard, or at least to doubt it, as if it disappointed my demand for uniformity of sequence, for example; the one demand being, so far as I can see, quite as subjective and emotional as the other is." ¹ As Knight says, "The philosophical basis of any soundly descriptive or useful study of man must be recognition of a complex and subtle pluralism of fundamental categories. The most important single fact about man is that he is at the same time a number of kinds of being, which are not only different but in theory mutually incompatible." ²

The Jamesian pluralist builds his theory of knowledge on the assertion that there is no single, comprehensive "reality" to which we can refer in testing our beliefs. On the contrary, there are as many "realities" as there are human interests. Therefore he affirms a "will-to-believe"

1 James, "The Dilemma of Determinism," in The Will to Believe, p. 147

2 "Free Society" (1948), reprinted History and Method, p. 285. Underlining added.

in many ideas though these cannot be tested by the methods of rational inquiry, if these beliefs give him moral or religious inspiration. For some truths, the will to believe is a condition of their becoming true, "and where faith in a fact can help create the fact, that would be an insane logic which should say that faith running ahead of scientific evidence is the 'lowest kind of immorality'," though such is the position, so James declared, of "scientific absolutists."¹ Pluralism is related to a theory of knowledge which makes truth "pragmatic" or "practical" in that truth is relative to human purposes, "to make the objects of scientific observation the only reality is merely to say dogmatically that scientific curiosity . . . shall be the only legitimate interest in life."² Action is opposed to reflection, and the pragmatic pluralist defends the life of action against the inhibitions of pure thought. We shall subsequently compare pluralistic pragmatism with another kind of pragmatism.

Both James and Bergson are concerned to defend moral, religious and aesthetic experience against materialistic science. As we shall show, Knight makes use of Jamesian pragmatic pluralism and Bergsonian creative evolution to develop a concept of political and economic freedom, an

1 "The Will to Believe," in The Will to Believe, p. 25

2 Knight, "Economic Psychology," op.cit., p. 95

individualist voluntarism. The task of preserving freedom is one of protecting a space in which the autonomous individual mind can exercise free choice, free from the encroachments of collective rationality, formed in the image of instrumental science.

* * * * *

But, as we have suggested, there is another path that takes off from James's vivid sense of life and his view of "the idea as active." This leads to a functional concept of mind, consistent with the principle of continuity, the idea that the mental is continuous with the physical. The Jamesian ambivalence is already apparent in The Principles of Psychology (1890). The purpose of this work, James writes, is to make an empirical science out of psychology. It is the "strictly positivist point of view" which James is particularly concerned to impress upon his readers.¹

James's empirical viewpoint is indicated in his proposal for a biological approach to psychology, in opposition to the dominant tradition in the psychology of the day, which confined the mind and its functions to a purely spiritual realm separated from the body. Instead of restricting analysis to introspective insight into such a spiritual realm, James turns to "objective manifestations of mind,"

¹ Principles of Psychology, preface, p. vi

and "when we look at living creatures from an outward point of view, one of the first things that strikes us is that they are bundles of habits." (p. 104) He says that the law of habit is a "material" law, capable of being observed and analyzed by the methods which have been so successful in the natural sciences. (p. 105) The formation of habits in human beings is due to the plasticity of their organic structures. The law of habit is stated in a nutshell in the phrase "that our nervous system grows to the modes in which it has been exercised." (p. 112)

James even says that habit formation in human beings is an instance of a process one sees throughout nature, "The laws of nature are nothing but the immutable habits which the different elementary sorts of matter follow in their actions and reactions on each other." (p. 104) If the human personality is regarded as a complex of habits and propensities, why do we require a different kind of observation and insight to learn about human nature than that we use to discover the "immutable habits" of physical nature? This side of James's thought suggests that man is continuous with nature, that the same human intelligence which has increased our understanding and powers of control over non-human natural processes can be usefully applied to human and social problems.

James's biologically based psychology of habit suggests a functional view of mind. According to the functionalist, "mind" is not a noun but a verb. Instead of standing for an invisible place, mind refers to a way of acting. When we concentrate and pay attention, we are minding what we do. The mental is therefore not a separate kind of existence, but a quality of observable performances. When we observe people take heed, solve problems, listen to lectures, argue and mind their various activities, we are observing the working of their minds. On this view, the creative mind does not operate in a place apart but is continuous with nature.

James's functional psychology became the basis of the social psychology of John Dewey.¹ Functionalism naturally suggests the method of behaviorism, which was proposed by a one time student of Dewey, Dr. John B. Watson. He wrote: "Psychology, as the behaviorist views it, is a purely objective, experimental branch of natural science which needs introspection as little as do the sciences of chemistry and physics . . ." ² However, if behaviorism is interpreted as a program to deny the fact of conscious life and the reality of human purposes and values (which is not the way Watson himself interpreted it) then it is in flagrant contradiction

1 See especially Human Nature and Conduct and Experience and Nature. See also George Herbert Mead, Mind, Self and Society, Charles W. Morris (ed) (1934).

2 "Psychology as the Behaviorist Views It," Psychological Review (1913), p. 176

with the functionalism of Dewey. Far from denying purpose, he seeks to explain it, to show how it grows out of biological forms. "What is excluded by the postulate of continuity is the appearance on the scene of a totally new outside force as a cause of changes that occur
 Postively and concretely, it means that a reasonable account shall be given of the ways in which it is possible for the traits that differentiate deliberate inquiry to develop out of biological activities not marked by these traits."¹

Yet, though James provides the insights for showing that the creative mind is continuous with nature, it is not the position that he takes himself. On the contrary, in the Principles the traditional dualism of mind and body is reaffirmed, even given a heightened significance.

The dualism, according to James, is implied in the conception of psychology as a science: "Psychology, the science of finite individual minds, assumes as its data (1) thoughts and feelings, and (2) a physical world in time and space with which they coexist and (3) they know."² In spite of the proposal to make a natural science of psychology, with a basis in biology, James actually devotes most of the space in his two volume work to the elaboration of an

1 Dewey, Logic: The Theory of Inquiry, pp. 23-4.

2 Principles of Psychology, preface, p. vi

individualistic psychology of consciousness, a science of "finite individual minds."

In fact, another group of psychologists--usually regarded as diametrically opposed to the functionalists--can also legitimately claim derivation from James. These were the structuralists. Structuralism began as a form of associationism, concerned with the way complex mental states were constructed out of elementary sensations. But structuralism eventually went beyond the idea of a discrete sensation as the unit of consciousness, and turned its attention to a study of the "dimensions of consciousness."¹ This is almost exactly the form of James's introspective psychology, which departs from the classic psychology only in that it repudiates the doctrine that experience takes the form of a succession of discrete sensations.

James attacked Spencer's "fundamental law of intelligence" which held that the primordial elements of consciousness were integrated into complex conscious states. Of Spencer's Principles of Psychology, he said that Spencer attempts to "show the fatal way the mind, supposed passive, is moulded by experiences of 'outer relations'.²" In opposition to associationism, James held that "consciousness . . . does not appear to itself chopped up in bits. Such words as 'chain' or 'train' do not describe it fitly as it presents

1 Kenneth W. Spence, Behavior Theory and Conditioning, p. 7

2 The Will to Believe, pp. 252-3

itself in the first instance. It is nothing jointed; it flows. A 'river' or a 'stream' are the metaphors by which it is most naturally described . . . let us call it the stream of thought, of consciousness or of subjective life."¹

According to James, the mind is active in attention. It "welcomes and rejects, or chooses, all the while it thinks . . . Out of what is in itself an indistinguishable, swarming continuum, devoid of distinction or emphasis, our senses make for us, by attending to this motion and ignoring that, a world full of contrasts, of sharp accents, of abrupt changes, of picturesque light and shade."² But this volitional character of thought creates paradoxes for a science of conduct. James describes the mind as "a theater of simultaneous possibilities."³ Yet deterministic science is according to him a "denial of possibility."⁴ The "great scientific postulate" is "that the world must be one unbroken fact, and that prediction of all things must be ideally, even if not actually, possible."⁵

The resolution of the difficulty is to turn to pluralism. Only in this way does he believe one can develop a science of psychology, and at the same time, retain one's faith in the freedom of the will, the "reality of choice."

1 Principles of Psychology, Vol. I, p. 239

2 ibid., p. 285

3 ibid., p. 288

4 ibid., Vol. II, p. 574

5 ibid., p. 573

The psychologist as scientist must simply affirm that he has nothing to say about freedom of the will. "Psychology will be Psychology, and Science Science, as much as ever (as much and no more) in this world, whether free-will be true in it or not. Science, however, must be constantly reminded that her purposes are not the only purposes, and that the order of uniform causation which she has use for, and is therefore right in postulating, may be enveloped in a higher order, on which she has no claims at all."¹

Science can never prove or disprove freedom of the will, because if it could, we could not choose to be free, and thus would not be free. So far as this question is concerned "science simply stops."² Free will "ought to be freely espoused by men who can equally well turn their backs upon it. In other words, our first act of freedom, if we are free, ought in all inward propriety to affirm that we are free. This should exclude, it seems to me, from the free will side of the question all hope of a coercive demonstration,--a demonstration which I, for one, am perfectly contented to go without."³

1 ibid., p. 576
 2 ibid.
 3 The Will to Believe, p. 146

The scientist must look on the "operation of free effort" as "amongst those physiological infinitesimals which calculation must forever neglect."¹ But even if scientifically irrelevant, one's commitment to free will is "morally and historically momentous."

It is from James's introspective psychology of consciousness, his pluralism, radical individualism, free will indeterminism and anti-scientism that important elements of Knightian libertarianism derive. On the other hand, as we have seen, another important trend in American intellectual history owes a large debt to James's proposed biologically oriented positive science of psychology and his psychology of habit. This trend, like the first, stresses the idea as active, but it makes mind and purpose continuous with physical nature rather than locating them in an insulated place apart.

In summary, pragmatism--the term that James did more than anyone to popularize--opposes the view that "the idea is active" to the spectator idea of a passive mind. But pragmatism can be combined either with an individualist psychology of consciousness or a functional concept of mind. The first combination produces pluralism. The pluralist shares the associationist's view of the mind as a separate existence. When he speaks of the active character of thought, he means truth is not unitary: "Reality is not what is

¹ Principles of Psychology, Vol. II, p. 577

logical, but what it suits our purposes to treat as real." ¹ There are as many kinds of truth as there are human interests, some of them contingent upon a "will-to-believe." The "active idea" is defended against a pedantic and inhibiting intellectualism. The second combination produces a pragmatism consistent with the post-Darwinian principle of continuity, which locates mind within nature. According to this position when we say "the idea is active," we do not mean that truth must be subordinated to activity, but that knowing is a form of activity.

The present study considers Knight's pluralism from a point of view based on the principle of continuity. We therefore compare two views of the creative mind. We shall find that these two concepts of mind imply strikingly different conclusions about such problems as the logical status of explanations that refer to qualities of mind or character, about the role of uncertainty in economic analysis, about the bearing of economic theory on policy.

We begin our discussion with a critical evaluation of Knight's ideas about the imputation of motives to economic actions.

1 Knight, "Economic Psychology," op.cit., p. 95

THREEMECHANICAL FORCES AND HUMAN DISPOSITIONS(1) Motive As Mechanical Force

Knight's methodological writings seek to establish the precise sense in which the economist can legitimately call himself a scientist, but he is also interested in showing that one who deals with the data of human consciousness can never be just a scientist, he must also invade the fields of morals, aesthetics and the theory of knowledge.

The methodological problems of economic science, as these present themselves to Knight, revolve about the alleged mental or psychological character of the economist's subject matter. If we hope to explain purposive conduct, we must know the motives of the actor. Yet how can the economist discuss such psychological phenomena as motives or purposes and retain his status as an empirical scientist? Knight claims that science deals with "observed facts" and "their relations of coexistence and sequence."¹ But motives are not objects or events that can be seen, touched, smelled, listened to, tasted. "Conscious states are certainly never observed through the senses, they are not directly observed in any sense in any other person; and it is far from clear

¹ "Economic Psychology and the Value Problem," (1925), reprinted in Ethics of Competition, p. 77

just what it means to say that one observes even his own conscious states as such."¹

Knight explains his view of economics as a science by making use of the analogy of motives to mechanical forces or causes. He says that, when the economist-as-scientist ascribes a motive to an action, he should be regarded as doing what the physicist does when he explains a motion by a force acting on an object. From "a scientific point of view the problem of economic behavior is parallel to that of the celestial motions. The 'desire' which we say 'makes' men buy goods is analogous to the 'attractive force' which makes objects fall to the surface of the earth and planets fall toward the sun."²

However Knight believes that argument is required to justify this treatment of conscious motives as the analogues of force. From a rigorously scientific viewpoint, "there is no way of demonstrating whether any reaction is conscious or not . . . the proper procedure is to ignore consciousness and infer the responses of human beings to situations from previous observation . . ." ³ The economist-as-scientist

1 ibid., p. 79

2 ibid., p. 83. For more recent expositions of this analogy, see "Realism and Relevance in the Theory of Demand," Journal of Political Economy (1944), and "Methodology in Economics," Southern Economic Journal (1961)

3 "The Limitations of Scientific Method in Economics," R.G. Tugwell (ed) The Trend of Economics (1924), reprinted Ethics of Competition, p. 119

must confine himself to dispassionate description. When he attributes an act to a motive, he has, according to Knight, ceased describing and begun interpreting. Knight refers to the theory of emotions known as the James-Lange theory.¹ He says that since its advent, the "weight of psychological opinion" is "increasingly against" treating conscious states as "causing" or "explaining conduct."²

According to the James-Lange theory, "the general causes of the emotions are indubitably physiological."³ Instead of the idea that "mental perception of some fact excites the mental affection called the emotion, and . . . this latter state of mind gives rise to the bodily expression," James argued that, on the contrary, "bodily changes follow directly the perception of the existing fact, and that our feeling of the same changes as they occur is the emotion."⁴ Or, in an often-quoted statement, ". . . we feel sorry because we cry, angry because we strike, afraid because we tremble, and not that we cry, strike or tremble, because we are sorry, angry or fearful . . ." ⁵

1 See William James, Principles of Psychology II, Ch. XXV. The theory is called the James-Lange theory because of the independent development of a similar theory, subsequent however to James's original publication of his version, by the Danish physiologist, C. Lange.

2 "Economic Psychology," op.cit., p. 78

3 James, op.cit., p. 449

4 ibid.

5 ibid., p. 450

This theory of emotions comes from the side of James that wished to make a natural science of psychology. It suggests man's continuity with nature, and the view of mind as a function rather than a separate existence. But James insisted that his theory did not imply a crude biological reductivism. "Let not this view be called materialistic."¹ To be biologically conditioned does not imply that all emotion and feeling can be reduced to biological factors, that we can describe or explain human conduct without reference to grief, joy, pride, envy. Moreover, James did not think that this view of the biological basis of emotion was in conflict with the reality of choice or volition. "We learn all our possibilities by way of experience. When a particular movement, having once occurred in a random, reflex, or involuntary way, has left an image of itself in the memory, then the movement can be desired again, proposed as an end, and deliberately willed. But it is impossible to see how it could be willed before."²

Later in this chapter, we shall argue that the James-Lange theory needs to be incorporated into a social psychology of habit.³ Emotions are then regarded as ways of acting in social situations rather than private feelings, considered either as phenom^{en}a of consciousness or as bodily states.

1 ibid., p. 453

2 ibid., p. 487

3 See Section (3) below.

We hope to show that this view yields a conception of motivation with significant implications for the psychological foundations of economic theory.

But, for Knight, the theory of James carries only the harsh implication that economists must abandon all pretense at offering a causal explanation of human acts. To hold that "feeling results from action rather than action from feeling" and "that we desire because we act rather than act because we desire" is to give up the idea that "conscious desires . . . can be regarded as 'causing' or 'explaining' conduct," and therefore refusing to answer such a question as, "Why do men purchase goods, and particular amounts of different goods?" The economist could only say that "the consumer feels a desire for a good because he purchases it," the act of purchase being itself the desire rather than the consequence of desire.¹ Beyond this, Knight reports a "still more recent" tendency "simply to leave desire and satisfaction and all feelings out of the scientific discussion of behavior and treat every action as a response of the organism to a situation or stimulus."²

If one proposes to maintain a "strictly scientific point of view," Knight claims this last position is the correct one. Science must "rigorously exclude 'metaphysical entities' of every sort." An explanation which brings in

1 "Economic Psychology," op.cit., pp. 78-9

2 ibid., p. 79

"facts of consciousness" is actually scientifically useless. "The purpose of knowledge is to predict, and the use of prediction is control. But we can predict only on the basis of some readily observable mark or condition. It is useless to know that a human being who feels in a certain way will act in a certain way, unless we have some perceptible indicator of the feeling, which indicator can be only a behavior fact."¹

Thus the dilemma with which the economist as analyst of human conduct is confronted. If desires or feelings are dependent upon or correlated with physical objects or events, "then it is simpler and more satisfactory to predict the act from the situation directly, especially as the desire itself can never be observed and has to be inferred from previous behaviour . . . At most, it may from this point of view conceivably be a matter of purely scientific, abstract interest that certain feelings go with certain conduct; it is surely evident that we cannot logically regard the conscious state as causing or explaining the conduct in any significant sense."²

On the other hand, if it is assumed "that feelings have some real existence apart from the observable physical facts pertaining to the organism . . . they actually make prediction and control impossible to the extent that they function as causes . . . Knowledge of coexistence and sequences among

1 ibid., p. 79

2 ibid., pp. 79-80

facts which cannot be observed is futile, even if we assume that it can be real . . . it is futile . . . to know that a certain desire causes a certain act, unless we have some way of knowing when that desire is operative other than to wait and see if the associated conduct takes place."¹

These considerations lead logically, according to Knight, to the conclusion that the economist-as-scientist must say nothing about desire, feeling or motive, and confine himself to the descriptive report of coexistences and sequences among "observable" events. Yet in the face of such logical demonstrations, Knight claims that "we go right on thinking of conduct as in the main the effect of desire, and it seems impossible to talk sense about it from any other point of view."² Reason and common sense are in conflict, and where such occurs, "all the dynamic power is on the side of common sense and it will go on doing what it finds irresistably convenient--'in erring reason's spite'."³ Knight claims that "the position of common sense is better grounded in terms of the ultimate and inclusive facts of experience than is that of scientific logic."⁴ This is a characteristic statement of the pluralistic pragmatist. It is his mission to defend the

1 ibid.

2 ibid., p. 80

3 ibid.

4 ibid., p. 81

deliverances of common sense in opposition to the "scientific dogmatist" who recognizes no validity save that revealed by materialistic science. "The truth is not only that the fundamental concepts of science are as different as possible from the 'facts' of the plain man's experience, but also that even these latter are far indeed from the character of immediate sense-data . . . much that the devotee of natural science methods dismisses contemptuously as 'mere emotion' may turn out to have as strong a claim to a counterpart in ultimate reality as can be put forth by any human experience whatever."¹

Knight uses his variation on the historic motive-force analogy to reconcile the "common sense" fact that we cannot explain conduct without reference to unobservable desires or motives with the demands of a scientific logic that rules out all such unobservable data as unscientific "metaphysical entities."

Social scientists who take their scientific status seriously must naturally deplore their inability to free their sciences from references to such "entities" as consciousness, feeling, desire. But Knight invites them to consider the situation of the physicists. "All that physics or any science can really do is to describe what is observed to happen; and the careful and candid scientist is especially conscientious in eschewing any knowledge of what 'makes' things happen, or

1 ibid.

whether anything does. The 'laws' of science are mere statements of dependable coexistences and sequences among events." In the interests of carrying out this program to confine themselves to dispassionate description, generations of physical scientists have attempted to rid their science of the metaphysical (essentially anthropomorphic) notion of force. Yet, so Knight claims, they have had no success. ". . . in practice, it is admittedly impossible to do without the notion of force! Mechanics has always used the notion freely, while explicitly recognizing that it stands for no real existence known to us . . ." ¹ The "simple, indispensable notion of force" is a "metaphysical entity," exactly like desire in economics, and the candid thinker has to recognize on every plane of experience that our thinking cannot be carried on without such conceptions. They have to be accepted as realities as much as any of our thought-content." ²

Knight claims that "candid reflection unquestionably shows that, in fact, the idea of force in connection with the motion of objects in space is a feeling of effort which we read into them on the basis of our own experience." ³ Therefore "we never succeed in eliminating consciousness from our ideas of material things . . ." ⁴ Such notions as "force,

1 ibid., pp. 81-82
 2 ibid., p. 82
 3 ibid., p. 83
 4 ibid., p. 120

tendency and equilibrium" are the results of these attributions of consciousness to the physicist's subject matter. The "materialist or behaviorist" who wishes to be consistent must confine himself to reports of measurable physical magnitudes. "If terms like equilibrium and tendency are used in such a system, it must be in the sense of statistical modes and mathematical limits, which is not the meaning they have in general usage."¹ If we can interpret the behavior of sticks and stones only by an imaginary identification of them with our own consciousness, then surely we must dismiss as fantastic the proposal of the "scientific dogmatist" or "behaviorist" to develop a purely objective, "descriptive" social science. "For the non-materialist, whether idealist, dualist, pluralist or what-not, so long as he considers it possible and important to speak intelligibly about mental life, the idea of force in human behavior is clearer and more real than in nature."² The unobservable "will to live" belongs to a higher reality than the mere "fact of living and increasing."³

Therefore the economist proceeds to attribute desires to the economic men who are the objects of his investigations, though such existences can never be established by observation. This imputed desire is the analogue of force in

1 "Statics and Dynamics," originally published in German as Statik und Dynamik, "Zeitschrift für Nationalökonomie" (1930), reprinted in translation in Ethics of Competition, p. 163

2 ibid.

3 "Economic Psychology," op.cit., p. 99

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mechanics. So long as he remains at this level, the economist's departure from pure behaviorism, through acceptance of the reality of motives, is no more than a parallel to the practice of the physicist, who also departs from behaviorism--or objective science--with his unseen forces.¹

However, the situation of the economist contrasts with that of the physicist, in that he has two sources of information about motives. The physicist can only infer forces from his actual observation of inert matter. He knows forces unambiguously insofar as he can be said to know them at all. "We infer the force from the effect, and in the nature of the case the force is always exactly what is required to 'explain' the effect observed."² Similarly, the economist-as-scientist "infers" motive from conduct, and inasmuch as it is what is required to explain the conduct, motive is the analogue of force. So far, the economist has not jeopardized his scientific credentials. But he has another source of knowledge about motives, besides scientific observation. Each of us, as living, conscious, purposive beings, is aware of desire through introspection. In addition, through social intercourse he becomes aware of desire in others. The "heart of the paradox,"

¹ See also Risk, Uncertainty and Profit, fn. 1, p. 64

² "Economic Psychology," op.cit., p. 84

says Knight, is that motives as inferred from observation and as felt and known through empathy do not correspond.

The failure of correspondence between what it is possible to observe and what one knows in another way, through introspective insight, reflects Knight's social philosophy of anti-scientism, the contrast between the inert and the living. We cannot "observe" and submit to scientific analysis the active, creative aspects of man's experience. There are two reasons for the discrepancy between what one is able to observe scientifically, and what one knows through intuitive insight into the actual.

First, rational action is subject to error. This is the defining characteristic of motivated action. In fact, the failure of the actual result to conform to the intended is held to be a condition of purposive action.¹ Otherwise, rational action would reduce to merely mechanical adaptation, requiring no thought or will. Error is the correlate of effort, and therefore of consciousness. So it is that motive as inferred, the motive which is the analogue of force, cannot correspond with the actual motive which impells action. Their discrepancy is a condition of motivated conduct.

Second, in actual conduct, the inferred motive and the felt motive cannot correspond because of the exploratory character of action. Much of our activity is concerned, not with satisfying given wants, but in discovering what our

1 "'What Is Truth' in Economics?" (1940), reprinted in History and Method, p. 163

wants actually are, and what kind of person we wish to be. "The purposes of men are inherently dynamic and changing; want-satisfying activity is not in the main directed toward gratifying desires sharply defined as data in the conduct problem; it is large exploratory in character The problem of human life is less that of getting preconceived results than of finding out the result of actions and acquiring 'better' wants."¹

Knight's pluralism assigns the economist a role requiring sudden changes of character. In fact, he must simultaneously enact several contradictory roles.

For the purposes of an economics which will be scientific in the sense of laboratory science, the course to be pursued is well marked out. It will be, like mechanics, behavioristic in theory but not so in terminology or in fact. It will employ freely the concept of desire as an explanation of behavior, as mechanics employs the concept of force as an explanation--because it is irresistibly convenient to do so. And it will carefully make it plain, as does its sister science in the corresponding case, that the concept is "really" but a short-hand manner of expressing the fact that there is uniformity of sequence or "law" in human response to situations. And everyone whose common sense is not suppressed by logical sophistication will know that in one case as in the other it is "really" no such thing! that desire and force are parts of the real universe with at least as good an epistemological pedigree as any observed behavior datum.²

For the economist, motives, desires or ends are forces, which he must, as scientist, view as "fictitious links between antecedent and consequent in behavior, manufactured

¹ "Economic Psychology," op.cit., p. 101

² ibid., p. 85

to humor a mental caprice."¹ Yet it is a central thesis of Knight that we must refer to "true" motives--as felt but not inferred--in order to deal realistically with human behavior, and, above all, to talk sensibly about problems of social policy. Psychology, together with cultural anthropology and institutional history, may give some (quasi-scientific) insight into what wants or ends actually are. But to make the analysis relevant to social problems, we must make clear distinction between desires and values. "In addition to the explanation of conduct in terms of motives and the explanation of motives, common sense does raise another kind of question, that of the evaluation of motives the essential element in the moral common sense of mankind seems to be the conviction that there is a difference between virtue and prudence, between what one 'really wants' to do and what one 'ought' to do."² However, he claims that there "are no rules for judging values, and it is the worst of errors to attempt to make rules--beyond the rule to 'use good judgement'; but it is also most false to assert that one opinion is as good as another, that de gustibus non disputandum est."³ Therefore he holds that "there is room in the field of conduct for three different kinds of treatment: first, a scientific view, or economics

1 ibid., p. 85

2 "Ethics and the Economic Interpretation," Quarterly Journal of Economics (1922), reprinted Ethics of Competition, p. 37

3 ibid., p. 40

and technology; second, a genetic view, or culture history; and third, for a criticism of values. The discussion of the latter will, like literary and artistic criticism, run in terms of suggestion rather than logical statement, in figurative rather than literal language, and its principles will be available through sympathetic interpretation rather than intellectual cognition."¹

* * * * *

Knight's use of the motive-force analogy is distinctive in that he turns the usual statement around. Traditionally, it was employed in attempts to legitimize the physicist's concept of force or cause by analogy to the introspected experience of conscious effort in human life. That we have immediate or indubitable knowledge of this inner experience was taken for granted in these arguments. The problem had to do with the warrant for imputing similar effort to the inert objects of physical nature. Knight on the other hand takes the position that it is the factual status of conscious effort that is the problem. He proposes to rationalize the economist's assumption that human conduct is purposive by analogy to an alleged metaphysical element in theoretical mechanics which he claims the physicist has been unable to eliminate.

The more usual way of stating the relationship between motive and force goes in this way. In the natural sciences, we observe how things happen, but we are unable to explain

1 ibid.

why. We know forces only by their effects. The efficient causes are merely inferred, they are not understood. We know "about" but not "of". The best we can do is make an admittedly weak analogical argument which assigns forces or causes to events on the basis of a parallel to the introspected knowledge of our own voluntary acts. However, in social science, we know the causal force at first hand, through introspection, even though its effects cannot be actually observed.

Along these lines it is possible to make a claim for the scientific superiority of economics and social science. Consider the contrast between the natural and social sciences made by John Elliott Cairnes, often regarded as the last of the economists of the classical school. He regarded both classical mechanics and economics as deductive sciences. But whereas the "economist starts with a knowledge of ultimate causes," the physicist, due to "the limitation of human faculties" is forced to resort to a cruder inductive method to establish the premises of his deductions. Where are the observations on which the Newtonian laws of motion rest? "We do not find them in our own consciousness, by reflecting on what passes in our minds . . ." To insist that the economist employ the method the physicist is forced to use is "to refuse to employ an engine of discovery ready to our hands, which the physicist has spent centuries of laborious speculation in his efforts

to attain . . . "¹

Cairnes's comparison between the natural and social scientist differs from Knight's in these ways. First, aside from the economist's more favorable situation for obtaining the evidence for his conclusions, there is, for Cairnes, no fundamental difference in the method and goals of the economist and the physicist. "Unfortunately, many who perfectly understand what science means when the word is employed with reference to physical nature, allow themselves to slide into a totally different sense of it . . . when they employ it with reference to social existence."² Second, though the economist begins with "knowledge of ultimate causes," this knowledge is not, for Cairnes, exclusively about the mind itself. Thus among the "axioms of economics" for Cairnes is the law of diminishing returns. Though he regards it as resting on indubitable facts, these are not psychological; rather the law states an obvious fact about agricultural production.³ For Knight, this law has nothing specifically to do with agriculture, it is an implicit assumption underlying the maximum principle, which he regards as the form of all rational choice.

¹ The Character and Logical Method of Political Economy (1875), pp. 70-84

² Essays in Political Economy, p. 252

³ In fact, Cairnes was among those who were critical of the Jevonian subjective value theory. Cf. Some Leading Principles, p. 21

Moreover, the fact that the economist is concerned with mental reality presents a far more complicated methodological problem to Knight than it does to Cairnes. In the tradition of Locke, Hume and J. S. Mill, Cairnes believes that to look outward at physical objects or inward at one's conscious states is a simple matter of shifting the angle of vision. But Knight is a free will indeterminist. The mind is the scene of unending creative evolution. It can be "observed" only by turning from Bergsonian intellect to intuition. The problem of converting motives into mechanical forces requires the economist to move up to a high level of abstraction. Though economic theories are said to be derived from "self-evident" axioms, their interpretation is a matter of considerable complexity, as we shall see in our subsequent discussion. Moreover, in contrast with Cairnes, Knight believes that both the methods and objectives of the economist differ sharply from those of the physical scientist.

In separating the natural and social sciences, Knight is much closer to orthodox German philosophy and social science than to the British tradition. Kant had contrasted the "phenomenal world," understandable through the methods of natural science, with the "world of spirit," which could be understood only through intuitive insight. As a consequence, there had developed in Germany a tendency to stress a radical difference between the methods of the natural and

the social sciences.¹ In the latter the analyst made use of a technique of sympathetic understanding, or what the German philosophers called Verstehen, which had no counterpart among the observational techniques of the natural scientist.

Max Weber, the sociologist and economist, belonged to this German cultural tradition. Though he did much to modify the dichotomy, he retained the idea that there was a fundamental difference between the methods and goals of the natural and social sciences. This was mainly due to the economist's and sociologist's use of the method of "subjective understanding" or Verstehen. In the following passage, he discusses this contrast in a manner that closely parallels Knight's use of the motive-force analogy:

We can accomplish something which is never attained in the natural sciences, namely the subjective understanding of the action of component individuals. The natural sciences on the other hand cannot do this being limited to the formulation of causal uniformities in objects and events and the explanation of individual facts by applying them. We do not "understand" the behavior of cells, but can only observe the relevant functional relationships and generalize on the basis of these observations. This additional achievement of explanation by interpretive understanding, as distinguished from external observation, is of course obtained only at a price--the more hypothetical and fragmentary character of its results. Nevertheless, subjective understanding is the specific characteristic of sociological knowledge.²

Subsequently, we consider the logical status of expres-

¹ See, e.g., Wilhelm Windelband, History and Natural Science (1874); Heinrich Rickert, The Limits of Natural Scientific Conceptions (1890).

² Theory of Social and Economic Organization, p. 101. This is a translation (1947) by A.M. Henderson and Talcott Parsons of Part I of Weber's Wirtschaft und Gesellschaft, with an introduction by Parsons.

sions assigning motives when one abandons the idea that he tests or verifies a hypothesis by referring it to the "immediate data of consciousness," and indeed denies the existence of any kind of "immediate knowledge," either of interior or exterior reality.

But let us first consider Knight's classification of the various "positivistic" and "motivated" approaches--scientific, philosophical, ethical--to the study of human conduct.

(2) Positivistic and Motivated Approaches to Human Problems

Knight places the approaches to the study of man into two broad classes, the "positivistic" and the "motivated," corresponding to the two sides of the mind-body dualism. Under each class, there are a number of sub-classes.

This is indicated in the following table.¹ He says the table suggests the "main types of categories in terms of which any human act would have to be explained," but it "could be greatly expanded, and all the categories apply to virtually every conscious human action A serious analysis of 'social phenomena', oriented to the methodological controversies which have been rife in recent years . . . would have to be based on a quite complicated pluralism."² We shall make use of the table for the organization of our discussion of the relationship between the various approaches. We shall first consider the table in a general way, and then turn to more detailed analysis of special problems.

¹ The table is taken from the essay, "'What Is Truth' in Economics?" originally published in Journal of Political Economy, 1940, and reprinted in History and Method. The table appears on p. 173 of the reprint.

² ibid., pp. 172-3

I Postivistic. (Causal laws in the sense of phenomenal uniformity, in contrast with motivation as an efficient cause, i.e., excluding deliberation and problem-solving; if consciousness is recognized, it is treated as "epiphenomenal.")

1. Physical causality or behaviorism. To be applied as a matter of course, so far as it can be, so far as it can yield answers to our questions. Measurement and correlation (statistics).
2. Historical causality. Linguistics is the type of a social science using the historical or institutional method, but it is also valid to a considerable extent for other departments of social behavior, including the "economic." (There is usually little question of deliberately changing a mode of institutional behavior, as the case of language adequately illustrates; also "observation" of meanings is a special problem.)
- 2a. Biological interpretation, involving such essentially teleological concepts as competitive struggle and adaption--as applied to plant or unconscious life-- is an entermediate or hybrid category.

II Motivated or deliberately problem-solving action. (Both "problem" and "solution" seem to be indefinable, doubtless the most important indefinables of our thinking.)

1. Economic behavior. A subject uses given means to realize given ends, only the procedure being problematical. (Taken in the strict sense, this applies only to "stationary conditions," but all deliberative behavior is economic "in so far as," and in the sense that, ends and means are given and the problem is that of procedure.)
2. Action in which the motive is abstract or social, such as interest in action or power as such, achievement, curiosity, conformity (to fashion or to law), distinction, co-operation, competition ("victory"), etc., but where no value judgement is involved.
3. Action in which the evaluation of the end is the main deliberative problem. This category includes intellectual, aesthetic, and ethical activity, or the pursuit of the proverbial trio, "the true, the beautiful, and the good."

Knight says that the consistent positivist or behaviorist is restricted by his premises to the first entry under the first class (I-1), "physical causality or behaviorism." He can get no further than a purely "descriptive" account of the sequences and coexistences among "sensible" objects. The inquirer approaches his subject matter without preconceptions, the mind acts as a passive recipient of "impressions" from the external environment, impinging upon the sensory. Though this method is "to be applied as a matter of course, so far as it can yield answers to our questions," Knight believes that this is a short distance indeed. By remaining at this level one could never produce a science of economics. Discussing the various "types of treatment of economic phenomena" which had been proposed during his career, Knight includes "a statistical study of the physical data, commodities and prices, with subjective or human elements left out," but he notes that "such a discussion is only by implication economics, and cannot be literally carried out, since uses as well as physical properties inevitably enter into the classification of commodities."¹

As he seeks to make his treatment more realistic and relevant, the theorist moves away from the level of "physical causality." The rigid dualism between subject and object breaks down. There are two reasons for the breakdown. One has to do with the possibility of observation. To observe,

¹ Risk, Uncertainty and Profit, Preface, p. xviii. We present below a fuller discussion of Knight's conception of positivism and behaviorism.

for Knight, is to establish a form of primitive contact between the objects under investigation and the sensory organs. In fact, only the measurable properties of objects, those appropriately treated by mathematical techniques, are "observable" in the strictest sense. Thus the behaviorist is confined to "measurement and correlation." If the data require "interpretation" in some or any sense, the analyst cannot be sure he is in contact with a reality that exists independently of thought. Therefore linguistic reports of other observers can be counted as observation only if the language is "literal," which, for Knight, means mathematical. Otherwise such reports require "interpretation" and the mind cannot retain its passivity.

The second reason for the breakdown of the dualism is the presence of creative activity in the subject matter under investigation--"all conceptions of any process as problem-solving in any sense . . . are excluded by the preconceptions of positivism, are rejected as unreal, transcendental, or mystical."¹ When the inquiring mind takes as subject matter other inquiring minds, the situation is one of complicated interaction rather than separation. "One both knows and influences others primarily by meaningful intercommunication, which we do not have with natural

¹ "What Is Truth?" op.cit., p. 174

objects and which they do not have with each other. It is essentially a mutual relation, where that of men to nature is unidirectional. Physical objects do not know or use men, or strive to do so Prediction and control between human beings obviously cannot be mutual--two cannot predict and control each other at the same time"¹

The sub-classes under the Post~~itivistic~~ivistic, other than "physical causality or behaviorism," relate to subject matter that complies with the requirements of positive science in that it does not exhibit problem solving activity, but it fails to comply with the requirement of being scientifically observable.

Biological interpretation (I-2a) represents an intermediate position between caused and motivated processes. This is because it makes use of teleological concepts, but does not assume purposive activity. Teleological behavior is goal directed. Plants and animals are described as maintaining a certain state, for example, an animal's body temperature fluctuates within a narrow range, though there may be large changes in the temperature of its environment. There is a suggestion of organized activity in this, even though there is no assumption of conscious effort.

It should be noted that Knight also believes it is possible to have^a/science of psychology, one that treats

¹ Intelligence and Democratic Action, pp. 69-70

conscious processes as phenomenal sequences, since "consciousness is not necessarily or always active, deliberative or problem solving."¹ This is to be distinguished from special physical and biological sciences, "such as neurology, physiology, and 'behaviorology'.² Both biology and the positive psychology of consciousness make use of data known by "intercommunication and interpretation" rather than "sense observation," "even the botanist, dealing with unconscious life, cannot talk sense without using teleological terms as will or urge to live and reproduce, adaptation, struggle, competition, economy."³ Though the applicable observation techniques depart from rigorous scientific standards, these sciences nevertheless qualify as positive since there is no interaction between their subject matter and the active mind of the scientific investigator.

In order to discuss the remaining classes in the table, it is necessary to pay some attention to the problem of the relation of the individual to the social organization of which he is a part. Knight is properly classified as a methodological individualist in his economic analysis and a political individualist in social policy. But he combines these two kinds of individualism with a strong emphasis on

1 "Fact and Value in Social Science" (1942), reprinted in Freedom and Reform, p. 241

2 ibid.

3 "Free Society: Its Basic Nature and Problems" (1948), reprinted in History and Method, p. 285

the social nature of man.¹

Unlike the individualist social philosophers of the Enlightenment, Knight will have nothing of a social contract. "If there is any nonsense that surpasses the contract theory of the origin of society, I should like to have an example of it . . . "² "Human society is far older than the individual in the sense of a member of an individualist society."³ "Man is completely social as a termite . . . "⁴ ". . . the human individual himself is 'social' in a complexity of ways, and consequently the notion of purely individual action is an analytic concept reached only by quite heroic abstraction."⁵

Nevertheless, insofar as man is intelligent, purposive

1 Knight is not a sociological individualist, using Schumpeter's terminology. See Joseph A. Schumpeter, History of Economic Analysis, pp. 887-9, for a definition of three kinds of individualism. "By Political Individualism we mean simply a laissez faire attitude in matters of economic policy . . . " (p. 888) By Methodological Individualism is meant the methodological resolution to regard economic explanation as incomplete until it has traced economic effects to the economizing individual mind. "By Sociological Individualism we mean the view, widely held in the seventeenth and eighteenth centuries, that the self-governing individual constitutes the ultimate unit of the social sciences; and that all social phenomena resolve themselves into decisions and actions of individuals that need not or cannot be further analyzed in terms of superindividual factors." (ibid.)

2 Intelligence and Democratic Action, p. 47

3 ibid.

4 "Free Society," op.cit., p. 282

5 "Science, Philosophy and Social Procedure" (1942), reprinted in Freedom and Reform, p. 206

and free, he is an individual. The problem of the relation of the individual to the social is the problem of man as instrumentally rational actor--a "Crusoe"--to man as a social animal, social being, and moral agent.

Knight explains the relationship of the individual to the social in human society by presenting a contrast between two kinds of societies. One of these is the society of social insects. The other is the free society of modern Western man.

Following Bergson, he outlines the evolutionary processes that have led up to these contrasting societies.¹

The colonial insects are the final outcome of one of these processes. The social patterns of these societies are based on anatomical and physiological specialization, fixed by instinct. The other process is the one that has evolved human society. Man is held to have gone through the evolutionary process as an individual, and to have become socialized only after he had developed the basis of intelligence. The point is elaborated by noting that the animals most closely related to man in their physical development are anti-social, tending to a solitary existence.²

Instrumental intelligence is therefore held to be a property of a pre-social individual mind. In fact, the social problem largely consists in counteracting the "anti-social

¹ See "Free Society," op.cit., and cf. Bergson, The Two Sources of Morality and Religion, Ch. IV.

² "Science, Philosophy and Social Procedure," op.cit., pp. 210-11

tendencies of man as an instrumentally intelligent being."¹
 The society of social insects is itself an organism; each individual is adapted to the requirements of the whole. Isolated from the social group, the individual will continue to perform his social function, even though it has become functionally meaningless. But free human society is an organization of instrumentally rational individuals, each regarding the social relation as a means to his own ends.²
 Knight says that "prior to modern times, civilized society has evinced increasing instability of organization, apparently due to a tendency of individualistic intelligence to break out of institutional and authoritarian--and intelligent moral--control and become predatory or even turn explicitly against life and pronounce it an evil."³

He explains the development of man and society in terms of his doctrine of emergent evolution. There are three sharp breaks in the continuity of the evolutionary process. The first occurs with the emergence of consciousness, superimposed on man as a physicochemical mechanism and biological organism. Man as a conscious being, capable of instrumental rationality, is prior to society. The second sharp break occurs with the emergence of primitive society. This, in Knight's view, was no affair of voluntary contract. "Men

1 "Free Society," op.cit., p. 284

2 "Socialism: The Nature of the Problem," (1940), reprinted in Freedom and Reform, p. 138

3 "Free Society," op.cit., p. 286

cooperate, or even associate naturally and freely, only in the smallest family group . . . with any degree of permanence. Stable social life and organization, on an appreciable scale, must have been forced on the species by the exigencies of economic life and/or warfare and must have been achieved under authoritative leadership."¹ Primitive society controls its members through enforcing conformity to rigid habits and customs. The institutional arrangements are sanctified by religion, with strict sanctions imposed for non-conformity. The significant feature of this stage is the virtual suppression of that instrumental intelligence which characterized man as a pre-social individual.²

The final discontinuity occurs with the emergence of free society. In this stage, man reaffirms his nature as a free, problem-solving individual. "The essential change is the replacement of sanctified custom and authority, by the still-experimental attempt to base social order on secular rationality -- 'government by discussion'".³ In free society, man becomes a procedural actor, and "activity is an attribute of a purposive individual, a subject, or self."⁴

Thus through the idea of emergent evolution we arrive at an alternative expression of Knight's doctrine of the pluralistic existence of man. Man is a physical mechanism, a bio-

1 "Science, Philosophy and Social Procedure," op.cit., p. 214

2 "Free Society," op.cit., pp. 283-5

3 ibid., p. 286

4 "Science, Philosophy and Social Procedure," op.cit., p. 205

logical organism, a social animal, an instrumentally rational actor, and a social being participating in "government by discussion."

We must now consider the remaining classes in the table. The class historical causality relates to the study of man as a social animal. As a permanent residue of his experience in primitive society, man is a creature of social habit and custom. His behavior as a social animal takes the form of what Knight calls social process, and in common with all process, it can be investigated by the methods of positive science. The example Knight uses in the table, and one he has used on other occasions, is the study of language. "The outstanding fact in the study of linguistics is that no one proposes to explain . . . the evolution of language in terms of conscious . . . individual motivation. Indeed, it is something of a paradox that, although language is evidently one of the most important instrumentalities or tools of social life . . . effort to increase the functional efficiency of language is found to play a relatively small role in linguistic change."¹ Language develops as the result of the accumulation of many unplanned, spontaneous changes in speech and writing. It is a historical process that Knight says can be described in positive categories. The only proviso is that the relevant data are not provided by what he calls "sense observation" but by "intercommunication and interpretation." Cultural

¹ "Some Notes on the Economic Interpretation of History" (1942) reprinted in Freedom and Reform, p. 256

anthropology is the science of social process. It "is in a sense the science of society, if the word is restricted, . . . to the category of a natural or positive science."¹ Traditional or institutional behavior is said to be "theoretically reducible to the mechanism of conditioned response, in contrast with activity, and is not social in the distinctively human sense . . . It is not different in essential principle from the instinctive organized life of the termites."²

Cultural anthropology retains its status as a positive science only on condition that it have no relevance for social action. The active inquiring mind cannot become part of its own subject matter. To qualify as positive, "the science can have no direct significance for social action in the society of the scientist himself; for if it results in such action, its conclusions are no longer true."³

Social action that is distinctively human, in contrast to the social arrangements of the insects, takes the form not of process but of procedure. Therefore, it cannot be brought under the categories of positive science. Social procedure consists of relationships between active, problem solving individuals. It belongs under the broad class of Motivated Action (II in the table).

Thus insofar as man is a mechanism, a biological organism and the "bearer" of a cultural tradition, "his behavior is to

1 "Fact and Value in Social Science" op.cit., p. 242
 2 "Science, Philosophy and Social Procedure," op.cit., p. 211
 3 "Fact and Value" op.cit., p. 242

be described in terms of mechanism or scientific law, in one sense or another, the conception not being pressed too far."¹ But we leave positive science behind when we consider man as a motivated actor.

The first sub-class under the class of Motivated Action is economic behavior. We shall consider the nature of economic science in detail subsequently, but for present purposes, we note that economics is the pure science of mind. The economist recognizes the "reality of motives," but he abstracts from the problem solving character of purposive activity through his assumption of omniscience, and of given means and ends. "Even at this, the 'economic' level, man's behavior is not exhaustively describable in terms of science, for to assert that the solution of any experiment or exploration is given in advance is a denial of its character as a problem."² The economist deals with problem solving activity "behavioristically"-- that is, scientifically-- through abstraction from its problematic nature. Therefore the difficult and confusing nature of abstraction in economic science.

The second sub-class under the motivated attempts to give content to the ends of action. To say that these are "abstract or social" means that the analyst takes account of the prevailing value system in the social environment in which the action takes place. The ends are no longer regarded as

1 ibid., p. 236

2 ibid.

simply given to the individual. This means greater realism, but a further remove from the level of scientific analysis into the realm of values, where aesthetics and ethics are the appropriate modes of cognition rather than objective science.

However, it is only when we come to the third class that we arrive at the level of human social action. Here the ends of action become the "main deliberative problem." Knight says, "In my view, only the problem of agreement upon ends and upon modes of cooperation is really social."¹

Social procedure is discussion, "the joint intellectual quest for the solution of value problems."² Knight regards the concept of discussion as the crucial idea in defining the nature of a free society. Democracy is "practically identical with discussion, the intellectual-cooperative quest of right answers to questions."³ True discussion can take place only between self-determining individuals, conscious selves with free will. The preconditions of discussion are differences of opinion about a problem with a possible solution, a "right" answer, and an association of free men dedicated to an impersonal quest for this right answer.

The ideal type for free social action is an intellectual association devoted to the discussion of art, science or

1 "Pragmatism and Social Action" (1936), reprinted in Freedom and Reform, ftn., p. 38

2 "Science, Philosophy and Social Procedure," op.cit., p. 216

3 "The Meaning of Democracy" (1941) reprinted in Freedom and Reform, p. 190

philosophy. One is free to become a member of such a group, to participate in the discussions, or to leave it. Though any such group requires rules for the organization of its activities, and also leadership, coercion or exercise of authority are reduced to the minimum and replaced by voluntary agreement between equal independent members. Such an association of free men is an ideal democracy, characterized by the absence of coercive enforcement of law. Knight says that only in such an ideal democracy can one find unadulterated social procedure concerning true problems. "The ideal meaning of 'government by discussion'. . . --would be establishment of unanimous agreement through intellectual process or activity, without any employment of coercive power."¹

Social procedure is analogous to discussion by the players of the rules of a game in which they are engaged. Each player has an ambivalent attitude toward the game. He wishes the game to continue and to be improved, to be made fairer and more interesting. He therefore has an interest in obeying the rules. But he also has an interest in winning, and he is constantly tempted to cheat, that is, to break the law. Play exhibits the "ubiquitous harmony and conflict of interests" which characterize all human relationships. Human play is both social and individual, cooperative and competitive. Discussion concerning the desirability of changing the rules grows out of conflicts of interest among the

¹ "The Playful Act" (1944), Freedom and Reform, p. 338

players, and difference of opinion about what changes would be right or fair. The possibility of reaching a generally acceptable decision about a change depends upon the differences in opinion being associated with a common interest, "the interest in perpetuating the group--in playing 'the game'¹--while improving its character."

In free society, social procedure takes the form of the discussion of desirable changes in the law. Society is "law and order." A free society allows full participation of its members in the activities of law making and changing. Since absolute unanimity is not usually to be had concerning a proposed change, complete freedom includes the right to leave the group at will, and to form other groups. The ability to give up one's citizenship in a modern state, and join another state or form a new state, is sharply limited; therefore, all states must employ coercion in forcing some citizens to obey the law. Knight defines a group as political to the extent that it does not allow this freedom to give up one's membership in it.² Thus the political is by definition identified with coercion.

* * * * *

The fundamental dichotomy between an interior realm of

1 "The Sickness of Liberal Society" (1946), reprinted in Freedom and Reform, p. 391

2 ibid.

consciousness and an external order of material objects is the basis of three subsidiary dichotomies, all reflected in the classification of approaches. There is the contrast between the caused and the motivated. Second, there is the contrast between external observation and intuited insight. Third, there is the contrast between the individual and the social. These contrasts are not only related to the fundamental dichotomy, but there is much overlapping between them.

For the pluralist or emergent evolutionist there are a number of systems each related to one of the plurality of orders in which man exists. However, any one system of explanation, pushed to its logical conclusion as a complete account of some kind of concrete behavior, always turns into a reduction to the absurd. "Ever not quite," as James said.

Knight quotes from the work on social science method by the sociologist, R.M. MacIver: "The chain of physical causation does not need mind except for its discovery. The chain of social causation needs mind ~~for~~¹ its existence." Knight claims: "The antithesis is false in both parts. Physical causation also needs mind, of a sort, to be 'real'; and social causation does not need it and cannot use it for the

¹ The quotation comes from MacIver's Social Causation (1942), p. 263

purposes of 'science', properly interpreted."¹

As our previous discussion of the motive-force analogy showed, Knight believes that the animistic, anthropomorphic-- "epithets which to the scientific mind are even more damaging than 'metaphysical'"² -- notion of force cannot be eliminated from scientific explanation. In this sense, even physical objects "have an ultimate kinship with mind."³ On the other hand, social science, "in so far as it goes beyond mere taxonomy and attempts to explain events and at the same time sticks to scientific concepts and methods," treats conscious states, if it recognizes them at all "as 'epiphenomena', as simply 'parallel' to the empirical order, without adding anything to the latter and as superfluous for scientific dis-

1 "Social Causation," History and Method, p. 139. This is a review essay of the volume mentioned in the previous footnote. The principle theme of MacIver's work is that ^{social} causation is a dynamic agency rather than a functional relationship like physical causation. He insists upon the need in social science inquiry for making use of some such technique as Weberian Verstehen or emphatic insight or sympathetic introspection. Knight naturally finds the argument congenial. He says that MacIver "argues nobly, effectively, and correctly for the reality of motives and for the necessity of taking them into account for the understanding of human behavior and social phenomena." (p. 139) Knight's principal criticism is that MacIver has an inadequate comprehension of the nature of economic science. The economist, for his professional purposes, does treat consciousness as epiphenomenal, and offers a mechanistic account of human conduct. The only logically consistent course is to acknowledge the paradox by becoming a pluralist.

2 History and Method, p. 138

3 ibid., p. 136

cussion."¹ The scientist as scientist properly denies the reality of purposive activity, both in non-human nature and in man, but Knight as pragmatic pluralist assures the scientist as human being that his program cannot be carried out in fact, either for the external order of physical objects or the internal order of consciousness.

We shall continue our discussion of Knight's views by first considering further his conception of orthodox economic theory and its relationship to the other sciences of nature and man. Then we shall discuss the relationship between man as an instrumentally rational being, an individual, and as a social being, engaging in social procedure.

¹ ibid., p. 139

(a) physical and economic behaviorism

There are a number of significant parallels between Knight's interpretation of the pure science of physical nature, made up of what he describes as "causal laws in the sense of phenomenal uniformity," and the pure science of instrumental rationality which is economic theory. We shall examine these parallels by first directing attention to Knight's conception of mathematics.

Like J. S. Mill, Knight holds mathematics to be an empirical science. "The writer is, like Mill, an empiricist, holding that all general truths or axioms are ultimately inductions from experience. By induction as a method is meant deliberate, scientific induction, the planned study of instances for the purpose of ascertaining their 'law'."¹ Mathematics is therefore regarded as a body of inductive generalizations. Mill's motive in insisting on the empirical character of mathematical laws was connected with his desire to do away once for all with the doctrine of innate ideas. For the view that the mind comes equipped with indubitable truths was a support to the maintenance of authority as opposed to reason, which insists that all opinion and belief submit to the test of experience. But the view that mathematical truths are ultimately inductions from experience has as a corollary the idea that induction can establish empirical knowledge which is certain, and therefore outside experimental control, so that

1 Risk, Uncertainty and Profit, ftn., p. 8

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in fact Mill's conception of mathematics has the same obscurantist implications it was intended to eliminate. Few modern logicians or philosophers of science believe that mathematics is an empirical science.¹ Propositions such as $2+2=4$ do not have the required property of being refutable by experience.

Knight's concern is not with the banishment of innate ideas, he wishes to argue for a class of truths at once a priori and empirical. The empirical character of the a priori, deductive science of economics is established by analogy with the a priori but allegedly empirical mathematical sciences such as arithmetic, algebra and geometry. Knight maintains that the "axioms of algebra and geometry" correspond to pervasive aspects of physical reality. "It may be true to say that universally necessary propositions are 'forms of thought', . . . but such a statement does not mean at all that they are not truths about the real objective world The real mystery, . . . is how mind could imagine . . . that there could be a real contrast between the most general features of reality as experienced and what a mind living in and formed by it is able to imagine, or between the fundamental laws of nature and those of thought."²

¹ See, e.g., John Dewey, Logic: The Theory of Inquiry, Ch. XX, Philipp Frank, Philosophy of Science, Ch. 3, Ernest Nagel, The Structure of Science, Ch. 8.

² "What Is Truth?" op.cit., p. 158

This idea of the nature of mathematics probably owes most to Bergson's teaching how intellect is formed in the evolutionary process, attuned to the properties of matter extended in space. The mind achieves an ability to abstract, to select the qualities of objects that can be subjected to mathematical treatment. This abstractive power of mind is the basis of man's instrumental rationality. As Bergson wrote:

. . . . It is impossible to consider the mechanism of our intellect and the progress of our science without arriving at the conclusion that intellect and matter there is, in fact, symmetry, concord and agreement."¹

Scientific observation is concerned with "verifiable observation through the senses,"² yet the most perfect empirical science is held to be mathematics. All instrumentally rational thought takes a quantitative form, "it is indisputable that in the thinking of civilized man choices are very largely a matter of quantitative comparison."³ Intellect is the abstractive power of mind to discriminate mathematical properties from the flux of experience. Mind is attuned to these countable or measurable aspects of the physical environment because it "has not the creative power to

¹ The Creative Mind, pp. 38-9

² "Economic Psychology," op.cit., p. 91

³ "What Is Truth?" op.cit., p. 166. The relevant quantities, moreover are cardinal, not ordinal. See Knight's essay, "Realism and Relevance in the Theory of Demand," Journal of Political Economy, 1944, and see also the final section of this chapter

imagine a world different from that in which we actually live."¹

The crucial role of mathematical knowledge is best brought out by considering further Knight's view of the nature of scientific explanation. Such explanation is a matter of translating the novel and complex into "the data of immediate observation." The epistemological problem centers in the elusiveness of these data. How can the observer be sure he is in contact with empirical reality? "The question of the primary or immediate data of consciousness is perhaps the main perennial, unsolved and probably unsolvable problem in the theory of knowledge as a whole."²

Knight says that there are three types "or fields" of knowledge. These are: "first, knowledge of 'the external world', including both the plain man's knowledge of empirical reality and the physical scientist's knowledge of his primary data of observation; second, the truths of logic and mathematics . . . third, knowledge of human conduct."³

It is argued that a high degree of skepticism is appropriate with respect to the first field of knowledge, which includes the physical scientist's knowledge of his primary data of observation, "the first fact which calls for emphasis is that the data of immediate observation cannot be taken on their face, but must be 'tested'. The bare fact that an in-

1 "The Limitations of Scientific Method," op.cit., p. 136

2 "What Is Truth?" op.cit., p. 159

3 ibid , p. 96

dividual sees, or thinks that he sees, or reports seeing a physical object or event--in everyday life or in a laboratory--by no means establishes that event as real, or a proposition reporting it as true."¹ Knight has in mind such aberrations in perception as the proverbial straight stick that looks bent in water, or the snakes that look as real to a sufferer from delirium tremens as the ones in a zoo look to a sober man.

He finds in this need for "testing"--he really means verifying--observations a paradox. The postivist must acknowledge the reality of his own thinking, and also the reality of other minds. "So far from our knowledge of the consciousness of other persons being an 'inference' from a 'perception' of their behavior, it turns out that the very capacity to perceive is developed through and dependent upon intercommunication between minds as conscious centers. Knowledge of that which we say we infer is logically prior to knowledge of that which we say we observe, since it is a condition of observation itself."² Moreover, the "conscious, critical consensus" which is "the essence of the idea of objectivity or truth" rests on value judgments as to the competence and reliability of the other observers. The ultimate basis of scientific objectivity is moral. "Scientific truth is a critical rather than a logical category."³

1 ibid., p. 156

2 "Economic Psychology," op.cit., p. 96

3 ibid., p. 97

Therefore, "anything that can properly be called knowledge on the part of any subject is unthinkable apart from self-knowledge and valid intercommunication with similar . . . knowing selves, living, thinking and acting in relation to a common world of not-self, which is the general object of knowledge."¹ But the dependence of our knowledge of the external world--the physical scientist's primary data of observation--upon intercommunication between minds has the effect of limiting that which can be known to the mathematical properties of objects and events. This is because Knight says we have no "literal language" except mathematics and symbolic logic. "By far the greater part of written or spoken discourse is more or less figurative, and it not only conveys a meaning, but usually a meaning it would be impossible to express directly, scientifically."² The "realm of meanings" cannot be translated into propositions referring to "sense data" drawn from the "verifiable world of physics."³ Meaning is a "subjective phenomenon," unique for each individual. One can eliminate disagreement about what is actually observed only if one can express his observations quantitatively.

We are therefore rescued from a profound solipsistic skepticism only by Knight's Bergsonian doctrine of the correspondence between intellect and the mathematical properties

1 "What Is Truth?" op.cit., p. 157

2 "The Limitations of Scientific Method," op.cit., p. 134

3 ibid.

of objects and events. The physical order which is the province of the pure science of nature, that which takes the form of "physical causality or behaviorism," is constituted of what Locke called "primary qualities," those of mass, weight, extension. Man's instrumental rationality is a power acquired in the evolutionary process, to sense, to quantify and to manipulate these measurable properties.

Mathematics is said to be "a structure of boundless and ever growing scope and intricacy . . . built up on the basis of a few simple axioms."¹ These axioms belong to Knight's "second field of knowledge," which is "at the same time knowledge of the external objective world and knowledge, in a special sense, of the way in which minds work."²

The special quality of all knowledge of the "second field" type is its abstractness, and therefore its generality. "It is never true in reality that two and two make four; for we cannot add unlike things and there are no two real things in the universe which are exactly alike. It is only to completely abstract units, entirely without content, that the most familiar laws of numbers and quantity apply. Yet no one questions the practical utility of such laws. They are infinitely more useful than they could be if they ever did fit exactly any single concrete case, since all that they lose in literal accuracy they gain in generality of application. By not being true in any case, they are significantly true in

1 ibid., p. 137

2 "What Is Truth?" op.cit., p. 157

all."¹

This is a singular view of the nature of scientific abstraction. For Knight, abstraction is not an analytic discrimination of data, looking toward the solution of a problem. To abstract is to come in contact with some order of reality through its correspondence with the "forms of thought." Since it "is never true in reality that two and two make four," and since Knight is "a radical empiricist in logic, which is to say . . . an agnostic on all questions beyond the fairly immediate facts of experience,"² there arises the question of how we could ever know that two and two make four. The answer is a feeling of certainty we have about such propositions. For our minds are limited in their "power to postulate or imagine deviations from reality . . ." On this criterion of empirical "reality," the "axioms of algebra seem 'more certain' and unescapable . . . than those of geometry, and the elementary laws of motion (the nature of mass and force) do not seem very far from the status of geometry as to inevitability."³

Abstraction therefore yields axioms which hold with certainty, and these can be deductively elaborated into theorems that hold with equal certainty, though they will not corres-

1 "The Limitations of Scientific Method," op.cit., p. 136

2 Risk, Uncertainty and Profit, ftn., p. 201

3 "What Is Truth?" op.cit., p. 160

pond with any concrete empirical reality. This idea of a consistency between the fundamental forms of thought and the orders of reality is the source of the many references to "indubitable," "self-evident," or "axiomatic" propositions in Knight's writings.¹

The "immediate data of consciousness" to which the empiricist looks for validations of his beliefs, tend to vanish under analysis. The result is a conversion of Knight's "radical empiricism" into something more appropriately called "radical apriorism." This conversion is a paradox similar to the many paradoxes Knight develops in connection with his pragmatic pluralism. Any principle, pushed to its logical conclusion, turns into its opposite. These ideas about the nature of abstraction and empirical verification have their principal application in connection with Knight's interpretation of orthodox economic theory. We now turn to a closer examination of this interpretation.

* * * * *

Economic theory is the science of Bergsonian intellect turned inward, on instrumental rationality itself. Knowledge of physical causality makes possible the manipulation and control of objects of the external environment. Economic science

¹ See, e.g., "The Ricardian Theory of Production and Distribution," (1935) History and Method, pp. 62 & 63, where the marginal productivity theory of distribution is held to follow from "trustical" and "self-evident" principles, which endow this doctrine with a similar degree of certainty.

derives its axioms from inward observation of the processes of choice and decision making involved in instrumental control. So Knight argues that "there is a science of economics, a true, and even exact, science, which reaches laws as universal as those of mathematics and mechanics. It comes about in the same general way as all science, except perhaps in a higher degree, i.e., through abstraction."¹

It is said to be more abstract because, while Knight claims that mathematical propositions are "verifiable in the crude empirical sense of that term, to any degree of accuracy which is thought worth the cost,"² by counting and measuring, this is not the case with economics. "Economics is not a strictly empirical science; its axioms and conclusions are not known by sense observation and cannot be verified . . ."³ Yet, though "the fundamental propositions and definitions of economics are neither observed nor inferred from observation in anything like the sense of generalizations of the positive natural sciences or of mathematics . . . they are in no real sense arbitrary. They state 'facts', truths about 'reality'--analytic and hence partial truths about 'mental' reality, of course--or else they are really 'false'."⁴

Our source of knowledge of the economic postulates or

¹ "The Limitations of Scientific Method," op.cit., p. 135

² "What Is Truth?" op.cit., p. 157

³ "Methodology in Economics," Southern Economic Journal, 1961, p. 188

⁴ ibid., p. 154

axioms comes from looking away from the Lockean "external" world into the inner world of consciousness. We must enter the third of Knight's three fields of knowledge. The subject matter of economics "is primarily human interests If anyone denies that men have interests or that 'we' have a considerably amount of valid knowledge about them, economics and all its works will simply be to such a person what the world of color is to a blind man."¹

Yet the postivist might insist he did not believe in consciousness, and there would be nothing to do except dismiss him as a "scientific dogmatist." While if one insisted that two plus two do not add to four, he could be convinced by placing two beans on a table and then adding two other beans, and showing him that there were four beans.² This is apparently what Knight means when he says economics is more abstract than mathematics, it is further removed from "sense data." Knight takes the "scientific" (postivist, behaviorist) attitude as a refusal to believe anything, however obvious, that cannot be translated into statements about "sensible objects" located in public space.

Nevertheless, granted that one has not been intellectually debauched by a crude postivism, the "basic postulates" of economics have an epistemological status similar to that of

¹ "What Is Truth?" op.cit., pp. 156-60

² Though we recall that "it is never true in reality that two and two make four," because we cannot add unlike things and no two beans are identical, so perhaps even here there is some scope for skepticism.

the axioms of algebra."

Knight refers with approval to Friedrich von Wieser's "psychological method."¹ Wieser claimed this method yielded knowledge of the inner life which held with apodictic certainty, "our mind ratifies every accurate description of the process of . . . consciousness by the affirmative declaration that such is the case, and by the compelling feeling that it must be so necessarily."² No observation of external reality provides knowledge of comparable indubitability. Knight calls the "psychological method" "essentially sound though the analysis is admittedly not carried far in the philosophical sense by Wieser or by most of those who advocate it."³ It has of course been Knight's mission as a methodologist and social philosopher to provide this philosophical analysis.

* * * * *

Let us now consider the principles of orthodox economics, as these are interpreted by Knight. We begin with the situation of an isolated individual, a Crusoe, confronting the inert objects of the "external world," with a view to manipulating

¹ "What Is Truth?" op.cit., p. 163

² Social Economics (trans. A. Ford Henrichs, 1927), p. 8

³ op.cit. Wieser uses the word "psychological" to mean "introspective." A psychological method is one that makes use of introspection into one's own conscious states. He denied any dependence of economics on the science of psychology. Knight uses the term psychology in this sense when he contrasts psychology with behaviorism. Wesley C. Mitchell complained about Wieser's use of the term psychological to describe his method. Mitchell said that "'logical' would be a more accurate adjective." ("Wieser's Theory of Social Economics," The Backward Art of Spending Money, p. 250.)

them for his own advantage. Knight says that the concept of a Crusoe is indispensable for elucidating the principles of economics. "Only in that way can we expect to get rid by abstraction of all the social relations, mutual persuasion, personal antipathies, and consciously competitive or cooperative relationships which keep the behavior of an individual in society from being, in any closely literal sense, economically rational."¹

Crusoe is a "purely individualistic individual" which is another way of saying that he is the "economic man." He exhibits pure instrumental rationality, unadulterated by social, moral or aesthetic interests. "He knows, or would know, only useful facts, about inert things and processes of change, and would solve problems only in the instrumental sense." Knight says Crusoe would be "a 'pragmatist' in the crudest meaning." His activity would fall in the category of procedure rather than process, he would "deliberate--act, exercise freedom, solve problems, in contrast with cause-and-effect behavior--but only in connection with the use of given means to realize given concrete ends." The ends of action would be biological or psychological and known immediately, thus ruling out any deliberation about ends. "His knowledge would be exclusively scientific, at the instrumental or 'economistic' level The economic man may only in a rather unrealistic sense be said to work, and he does not play; he maximizes satisfaction,

¹ Intelligence and Democratic Action, pp. 74-5

subject to the condition of the 'resources' at his command."¹

To bring motivated activity within the scope of science, we must find a way of analytically separating purpose from the possibility of error. This is accomplished through the assumption of omniscience. But the identification of rationality with the means-ends schema of orthodox economics, under conditions of omniscience, has the effect of eliminating all the kinds of creative activity which we regard as the most authentic expressions of intellect, as this term is used in ordinary discourse, from that "intellect" which serves as the postulate of economic theory. Scientific discovery, for example, is not an exercise of intellect but of intuition.

Action cannot be highly rational, since it involves research and invention, which are highly exploratory, as in fact all problem-solving activity is, in the nature of the case.² From this point of view . . . the animals are superior to men, in that they are more intelligent, sensible; a hog knows what is good for him and does it!³

The theoretical analysis moves on a high level of abstraction. It is unrealistic and, as Knight says, in some respects even absurd. Yet he views orthodox economic theory as a closed system of perfect knowledge about an order of reality, a deductive elaboration of postulates that correspond to the

¹ These passages quoted from "Science, Philosophy and Social Procedure," op.cit., p. 207

² Intelligence and Democratic Action, p. 110

³ "Ethics and the Economic Interpretation" (1922), reprinted in Ethics and Competition, p. 35

"forms of thought." Given the truth of the axioms, the conclusions follow with apodictic certainty, though Knight says they cannot be tested or verified by any procedure known to empirical science. He describes the economist as dealing in self-evident truths.

"We spend our time and wear away our lives triturating the obvious;¹ The most interesting feature of economic theory is that its larger and more important questions are generally self-answering when explicitly and correctly stated. Indeed, the problem of social action, from the economic standpoint, is chiefly that of getting people--to act in accord with principles which when stated in simple and set terms are trite even to the man in the street.²"

What is "perhaps the most interesting epistemological datum for economic theory" is expressed in this paradox. Every individual who accepts the reality of purpose in human life is supposed to understand the meaning of the proposition that "maximum efficiency is (would be) achieved through ideal allocation of allocable resources" and also to know that "no individual achieves this maximum If conformity were perfect, the behavior in question would cease to be either 'economic' or deliberate, and would become a mere mechanical response to a stimulus situation, which is a categorically different matter."³

* * * * *

Though economic science is the science of instrumental

1 Intelligence and Democratic Action, p. 3

2 "Socialism," op.cit., p. 130

3 "What Is Truth?" op.cit., p. 168

rationality, it is not itself useful for purposes of the instrumental control of the economic order. Knight says, "The practical relevance of economic theory is chiefly to the problems of social action. But in free society the objective of social control is not usually to make individuals behave in one particular way than in another; it is simply to create the conditions under which individuals will be able to realize their individual objectives to the maximum degree."¹

With respect to social policy the function of economic theory is negative. One derives from it injunctions against actions, things not to do. "It can tell us little in the concrete, and its chief function is negative--to offset as far as possible the stupid theorizing of the man in the street."²

The major task of the economist is to overcome prejudice rather than remove ignorance. "The most important obligation of the teacher of economics who seriously tries to be useful . . . is to get the public, the electorate, to pay attention to and apply self-evident truths or virtual truisms. The situation suggests as a primary need some Gertrude Stein to re-iterate that an exchange is an exchange is an exchange"³

This negative character Knight claims economic theory shares with general physics. Both are said to be "dismal sciences," useful because of what they tell us not to do. For

1 "Social Causation," op.cit., pp. 144-5

2 "The Limitations of Scientific Method," op.cit., p. 147

3 Intelligence and Democratic Action, pp. 1-2

the theoretical physicist, "the first step is to formulate the universal conservation principles--mass, momentum, and energy, quantitatively defined in primary units of space, force and time Such principles convey little concrete information to such a practitioner as a builder of automobiles, and that little is chiefly negative--things not to try to do. General physics has the same claim as economics to be called a 'dismal science'."¹ "The two fields are more or less parallel in this respect, but people want to throw economics out because it is unrealistic, while they go ahead and use physical engineering more or less intelligently" ² But unreal does not mean untrue. Both sciences take the form of complete, closed "descriptions" of their particular division of man's pluralistic existence.

* * * * *

Unlike Marshall, Schumpeter and many other--perhaps most--neoclassical theorists, Knight does not believe that economic theory can provide the concepts for a statistical or econometric model, and be itself tested by the results of a statistical investigation. Speaking of testing economic theory by empirical or historical investigation, he says "any such tests which can be proposed would rather themselves have to be tested by the propositions of economic theory as already understood."³

¹ "Economic, Political Science, and Education" (1944), reprinted in Freedom and Reform, p. 328

² Intelligence and Democratic Action, p. 75

³ "What Is Truth?" op.cit., p. 153

He means they would have to be related to economic motives, which Knight believes are not matters of scientific observation.

Earlier in his career, he took what is probably the conventional view among orthodox economists about the relationship of induction to deduction. In Risk, Uncertainty and Profit, he said the "fundamental laws of economics are . . . properly 'intuitive' to begin with "--that is, based on introspective observation extended to "our fellow human beings" by a "process of interpretation highly instinctive and subconscious"--but those "intuited laws" are "of course always subject to correction by induction in the ordinary sense of observation and statistical treatment of data." (ftn., pp. 7-8)

But in more recent discussions of social science method, he denies the relevance of statistical investigations to the conclusions of the orthodox economist. Statistical and historical research, the findings of the other social sciences, as well as psychology "are needed to supply data and interpretation, to put content and definiteness into the valid but highly abstract 'laws' of economic choice and market phenomenon." But these inductive studies do not bear on the truth or falsity of orthodox economic doctrines, "since any course of events that occurs can be fitted into the theoretical pattern."¹ Economists have in recent decades devoted themselves with unusual energy to accumulating factual knowledge,

¹ "Economics," Encyclopaedia Britannica (1951), reprinted History and Method, p. 26

"without nullifying any of the established principles" of orthodox economics.¹

Economic theory is, for Knight, essentially a scrupulous working out of the mechanical analogy in the field of human conduct. The appropriateness of this analogy is consistently defended. "The statement that economics describes the way the economic order works refers to its working as a mechanism; that is the meaning of being scientific."² Schumpeter, who believed that biology and not mechanics was the correct model for economic theory, is criticized for this view. Knight says that words like equilibrium would not have been taken over by economists if there were not "a real and important relation," and "the constant use of the concepts of friction and inertia is additional proof that the analogy of mechanics exerts a large influence on the thinking of economists."³ His program for the development of a dynamic economics takes the form of searching for psychic counterparts to mechanical concepts like friction, inertia, velocity, resistance. He claims there is no economic dynamics at present. "Economic literature includes no treatment of the relations between measured force, resistance and movement." He believes that "what it calls dynamics should be called evolutionary or historical economics." He suggests that "the statistical econ-

1 ibid.

2 Intelligence and Democratic Action, p. 72

3 "Statics and Dynamics," op.cit., pp. 161-2

omics now being prosecuted . . . might yield data for some of these definitions, though the inquiries are not consciously oriented to any such scientific aim."¹

A dynamics of the type Knight proposes will confine itself to the study of economic change "under the given conditions." It will deal with "not the conditions of equilibrium," but with movement toward equilibrium. All science is static in that it must deal with an (ultimately) unchanging subject matter, for "if it is the essential nature of a thing to grow and change, it cannot serve as a scientific datum."² "Mechanics . . . has no place for evolutionary categories; it assumes constancy in its ultimates, believing (until recently) that mass and energy are 'really' neither created nor destroyed."³ So it is that "mechanical or scientific dynamics, dealing with change in accord with unchanging law, belongs to statics, in a philosophical dichotomy."⁴

The "essential idea" underlying the scientific analysis of change is "that a thing does not change in 'essence' if it changes predictably, since it remains true to its nature which is to change in the same unchanging way

Science refuses to credit the idea of internal, independent changes in simple elementary things, even in accordance with law, and insists on reducing all change

1 ibid., p. 167

2 "Ethics and the Economic Interpretation" (1922), reprinted in Ethics of Competition, p. 21

3 ibid., p. 167

4 "Science, Philosophy and Social Procedure" op.cit., p. 205

to changes in the relations of unchanging elements or units.

Thus a science of economic dynamics must be sharply distinguished from historical or institutional economics. These latter make use of evolutionary categories which Knight regards as not "scientific." "Culture history is not . . . a method of economics, . . . but a different level of inquiry. It gives a genetic, and not a scientific account of its subject matter."² Science can only deal with quantitative variation, it excludes the qualitative change which is the concern of the emergent evolutionist or the historian.

If a mechanical system is in disequilibrium it will move toward a state of rest, but the position of rest and the nature of the movement will depend on the character of the friction present, the inertia and the degree of disequilibrium of the starting point. Knight's economic dynamics requires the translation of the disequilibrium concepts of ignorance, error and prejudice into frictions, inertias and resistances. "Mechanics runs in terms of three ultimate dimensions, time, space and mass . . . and to these be added in application to reality the different types of friction Only the time dimension seems to carry over directly and be available for use in such a field as economics. Yet it appears that we cannot re-

1 "The Limitations of Scientific Method," op.cit., p. 110

2 "Ethics and the Economic Interpretation" op.cit., pp. 36-7

duce the economic process to quantitative terms unless we can give workable meaning to space and to mass, and to space not merely in the aspect of measurable distance, but in that of direction as well."¹

Until these mechanical equivalents have been worked out, it is impossible to give the economics of change (in the sense of movements to equilibrium) a quantitative form. "A . . . fundamental weakness of inductive prediction in economics is that empirical (i.e., statistical) data never present anything like an exhaustive analysis of phenomenal sequences down to really elementary components, and the correlation of and extrapolation from composite magnitudes or series never can be very reliable. The real unit would be an invariant and measurable human trait, either an interest or a response independent of interests, a reflex."²

Failure to work toward such an economic dynamics is Knight's explanation for the fact that economists in the orthodox tradition did not recognize the business cycle and deal adequately with its causation. Knight's "methodological approach" to the business cycle is a consideration of how the mechanical analogy can be extended to take account of cyclical fluctuations. He proposes viewing the economic system as a "machine self-regulated by a governor." Then "a little reflection about the working of any mechanical governor suffices to show that such

1 "Statics and Dynamics," op.cit., p. 166

2 "What Is Truth?" op.cit., p. 176

a device always controls the regulated phenomenon--the speed of an engine, the temperature of a room, etc.--within some limits, between which it oscillates in a more or less regular or rhythmic cycle."¹ This is because of an inevitable "lag" in the working of the governor. "In the presence of a lag between cause and effect, the function-and-variable conception of cause and effect itself is valid only for long-run tendencies; it applies to the equilibrium situation only, giving no information as to the quantitative relation between the cause and the effect (the independent and the dependent variable) at any moment of time."²

Nevertheless, these dynamic effects, the consequences of lags in the mechanism of response, do not "invalidate the concept of equilibrium or the necessity of using the concept in causal analysis." In economics and mechanics, "the attraction to equilibrium is the vital point in the theoretical explanation."³

Knight believes that economists have gone astray in recent decades through failure to distinguish between "disturbances" and long-run causal (equilibrium) relations. He gives as "a simple mechanical example of the phenomenon of disturbance in the absence of any long-run causal relation . . . a dam across

¹ "The Business Cycle, Interest and Money: A Methodological Approach," (1941) History and Method, p. 203

² ibid.

³ ibid., p. 205

a stream . . . backing up a substantial quantity of water on the upper side . . . Any opening or closing of sluices will produce a temporary change which may be of very great magnitude in the level and the rate of flow of the stream below the dam, but no permanent change The flow below the dam is not a 'function' of the size of the opening in the obstruction, or the height of the latter, whether at equilibrium or at any moment during readjustment to the effective height of the dam."¹ Reflection on this example is supposed to reveal the confusion of "disturbances" with "equilibrium relations" of which economists have been guilty in their attacks on the quantity theory of money, and their proposals for a monetary theory of interest. The fact that changes in the quantity of money can affect the rate of interest does not make interest a "function" of the quantity of money. Monetary interest theorists confuse "disturbances" for equilibrium relations. Thus the importance of developing an economic dynamics--an analysis of movements to equilibrium--to expose these fallacies. One can explain the business cycle without repudiating the orthodox "deductive-theoretical method of attack on economic problems."²

* * * * *

The relationship between history and science in Knight's writings is not a little confusing because of the different meanings he gives the term "scientific." Frequently he uses

1 ibid., p. 204

2 ibid., p. 202

it to mean "consistent with the mechanical analogy," as in the statement quoted above about how scientific economics treats the economic system as a mechanism, "that is what we mean by being scientific." But we recall that Knight sometimes says that economics is not a science (or it is only a "quasi-science") because it brings unobservable motives into the analysis, which are, however, the analogues of the immaterial forces of classical mechanics. A strict positivist-behaviorist will say nothing of tendency, equilibrium, force, cause, motive, feeling or desire.

When Knight opposes the "scientific" to the "historical and genetic," he means scientific as "consistent with the mechanical analogy," which is not consistent with the most rigorous positivism. The thorough-going positivist will take precisely the point of view of "historical causality." He will say nothing about motive and force and confine the discussion to "trends and correlations." In our discussion of Knight's classification of approaches, we noted that cultural anthropology was regarded as "the" science of society, because it studies social process in abstraction from procedure. Those accused of "scientism" are typically historicists rather than mechanists. They propose to turn away from ^{the} mechanical analogy and convert economics into a "science of history," a project which Knight believes entails the elimination of procedure from human affairs. Or, as he says, it requires the elimination of "real time." "The propositions of history, natural or human,

are . . . essentially 'timeless', in the metaphysical sense, in so far as history itself is scientific. This quality of science . . . is often expressed by saying that, for science, time is essentially a spatial dimension. The philosophy of Bergson in particular centered around the contrast between such time--mere duration--and 'real time'. The latter, as Bergson also emphasized, is intelligible only in terms of will--really active or creative change."¹

Knight's proposed dynamic economics is to be a product of further development, beyond the relationship between motives and forces, of the mechanical analogy. Science, for Knight, is not a "logic of scientific discovery." Exploratory or experimental action is "beyond the pale of strictly scientific treatment"² because a "scientific world view has no possible place for . . . the foresight of new truth in advance of perception."³ Scientific abstraction is not an intermediate stage in inquiry, between the location of a problem and its successful solution. It is a way of making contact with one of the plurality of orders of existence, and given that we have made proper contact, it is immune from tests in application. The certainty of mathematical laws is guaranteed by the consistency of the "axioms of arithmetic and algebra" with the "forms of thought," and is quite independent of the

1 "Social Causation" op.cit., p. 141

2 "Limitations of Scientific Method" op.cit., p. 142

3 ibid., p. 110

results of applications. Knight's perplexing assertion that it "is never true in reality that two and two make four"¹ in no way compromises this certainty. The laws are not validated by their consequences but by their antecedents.

In the same way, there is nothing corresponding to an economic man or even an instrumentally rational act. "It would^{not}/be rational to be, or try to be, perfectly rational."² Yet the laws of economics are deductive elaborations of axioms corresponding to the forms of thought, and they have (to all save the "scientific dogmatist") the property of certainty. They cannot be disproved by experience, no observations of empirical fact have a bearing on their truth or falsity. One may correct the errors in deduction of one's predecessors-- Knight has been much concerned with this--but it would not be correct to regard the economist as a seeker of new knowledge. Rather his role is one of methodologist and interpreter. Among other concerns, he explains the wide gulf between the results of observation and the theory. Those who complain of the unrealistic character of the theory are accused of a vulgar ignorance of the nature of scientific abstraction. According to the view of scientific method which Knight defends, the task of the economic theorist is one of conforming the data to the harsh specifications of Bergsonian intellect--turning procedure into process, reducing the problem to an affair of mechanical interactions among unalterable particles in un-

1 ibid., p. 136

2 Intelligence and Democratic Action, p. 72

changing space--however offensive the result may be to intuition and common sense.

The questions that are raised by Knight's methodological analysis of orthodox economic theory turn on the nature of scientific abstraction and the related question of the nature of observation in the empirical sciences. In a fundamental sense, they involve the meaning of intelligence or reason. We shall therefore next consider the relationship between Knight's two kinds of rationality, the instrumental rationality of Crusoe the economic man, and the rationality of man as social being, a participant in social procedure.

(b) the individual and the social

Social procedure is social action directed to the resolution of value conflicts. Social procedure includes all the activities involved in "government by discussion," "social problems and social procedure, properly speaking pertain exclusively to free society, to ideal democracy, in which there is no formal enforcement of law."¹ Therefore one never finds social procedure in an unadulterated form in any actual society.

Social procedure is described as an exercise of intelligence, but instrumental rationality or science has no appropriate role to play in the discussion of value problems. These cannot be converted into means-end problems, which Knight regards as the only form in which scientific questions can be asked.² He has suggested using the word intelligence as a broader term, to include both rationality in the narrower sense of science, and critical judgment about the choice between ends.³ He uses the word ethics to describe the kind of deliberation about ends which takes the form of social procedure, as contrasted with morals--from mores--which refers to the non-

1 "Science, Philosophy and Social Procedure," op.cit., p. 214

2 "Beyond obvious and fairly narrow limits, it becomes entirely unrealistic to look at the good life in economic terms, or under the form of means and ends, even with the choice of ends not treated as given but also included in the problem; indeed, there are limits to viewing it as a problem in any sense." ibid., p. 386

3 Intelligence and Democratic Action, p. 17

problematic, religiously sanctioned imperatives governing¹ conduct in the traditional, pre-liberal society.

However, though it is an intelligent activity, the kind of knowledge social procedure provides is "not a matter of logic or scientific induction."² The "social problem" is a problem of "discovery and definition of values--a moral, not to say a religious, problem; and . . . the relation of the procedure of attack on such problems to intelligence in the scientific sense is primarily one of contrast."³

If the activity of reaching a judgement about values could be described in advance, there would be no problem about the content of values. One can describe the rules of order regulating deliberative assemblies, or the institutions of organized political life. But these are superficial aspects of the procedures of social discussion. Social procedure does not depend on political forms, but on "informal and intellectually mysterious processes, or procedures, by which public opinion is formed."⁴ These are "unorganized activities of free intercourse"⁵ among the citizens.

Nevertheless, in spite of the "mysterious and indescribable" nature of the activity leading to their discovery, eth-

1 ibid., p. 139

2 ibid., p. 141

3 "Pragmatism and Social Action," op.cit., p. 42

4 "Science, Philosophy and Social Procedure," op.cit., p. 217

5 ibid.

ical values are said to be objective. If this were not so, there could be no discussion looking to a consensus. For discussion implies recognition of a problem with a right solution. Knight says that the "spirit of discussion is the essence of the scientific spirit, but the antithesis of the scientific method."¹ The objectivity of "valid value" contrasts sharply with that of logically demonstrated and experimentally tested truth.²

Therefore intelligence in the broad sense comprises two disparate kinds of rationality. One is the instrumental rationality of the economic man, the "individualist individual." The other is that of man as a "social individual," participating in the discussion of value problems. Intelligence in the selection of ends is fundamentally different from intelligence in the use of means, and "intelligence in establishing agreement on common ends--and on common, cooperative procedure in the pursuit of individual ends--is considerably different still."³

That social discussion takes the form of "indescribable, mysterious" procedure means that it belongs to the realm of mind or consciousness, as opposed to the observable world of physical bodies. Communication between individual minds is a form of activity, therefore its description in the categories

¹ Risk, Uncertainty and Profit, Preface, p. xxxvi

² "Pragmatism and Social Action," op.cit., p. 42

³ ibid., p. 43

of positive science is impossible. This brings us to Knight's conception of language and communication.

Expression and communication, he says, can be included in overt behavior only "by something of a tour de force."¹ The "subjective data" which are the principal concern of the social scientist and moralist--meanings, attitudes, opinions and values--are obtained mainly through communication, and Knight doubts that this can be called observation.

We understand our fellow human beings through "interpretation of the communicative signs of speech, gesture, facial expression, far more than upon direct observation of behavior, and this process is highly instinctive and subconscious in character."² The "behaviorist-materialist" is unable to "point out in terms of sense qualities" the relationship of most verbal expressions to the ideas being communicated. "No two people talk identically the same language. The great majority of sentences spoken or written express and convey to the hearer ideas to some extent original and unique." Therefore Knight believes that "how we ever learn to communicate thought and feeling seems profoundly mysterious The writer is impelled to believe to some extent in an intuitive 'faculty' of communication and interpretation."³

1 "Fact and Value in Social Science," op.cit., p. 229

2 Risk, Uncertainty and Profit, ftn., p. 7-8

3 "Economic Psychology," ftn., op.cit., p. 90

This is a nominalist conception of language. It assumes that thought takes place in isolated minds, that language is merely a device for more or less adequately communicating ideas which pre-exist the act of communication. This is the meaning of Knight's statement that problem-solving activity is "indescribable," for "any literal description of it is not merely a failure but definitely falsifies its nature."¹ Thought goes on prior to and independent of its symbolic expression. This nominalist view of language epitomizes Knight's conception of human nature and its relation to the natural and social environment. Each mind or consciousness is imprisoned in what is virtually a solipsistic cell, the only mitigation of this isolation being the ability of the five senses to make contact with the Lockean primary qualities of the objects of non-ego environment, the measurable properties that can be subjected to mathematical treatment.

Let us confront this view of language with one consistent with the post-Darwinian principle of continuity, which denies the traditional dualisms. A child must be taught to read aloud before he learns to read silently to himself. Analogously, to think in silent soliloquy is a skill one acquires only after he has learned to express his ideas to others. Symbolizing behavior, the use of the various kinds of language, including mathematics, is the activity of man as a social

¹ "Science, Philosophy and Social Procedure," op.cit., p. 206

being. This symbolizing activity is the working of minds. Thoughts do not pre-exist their expression in language, this expression--written down, spoken aloud or silently to one-self--is what we mean by thinking. Our soliloquies are not monitorings of a strictly private stream of consciousness, the results of such monitorings to be subsequently expressed, more or less adequately, or kept to ourselves. Our ability to soliloquize is derived from our oral and written expression. Before we learn to talk to ourselves in silent soliloquy, we must learn to talk aloud, to others.

The symbols of social intercourse are continuous with the signs and signals that we find at even the most primitive levels of life. Smoke is a sign of fire, the clouds of rain. Symbols differ from signs in that their references is a matter of social convention. The association of the word "cloud" with the forms in the sky that are seen in advance of a rain-storm is arbitrary. But the freedom from association with a specific existence increases the ability to establish relations in discourse, for example, between clouds and water, gases, temperature. This greatly increased power of establishing relationships and so enlarging the possibilities of experience gives a new quality to life. The Cartesian-Lockean dualism of mind and body, and the notion of emergent evolution are attempts to account for this quality. From the present point of view they are myths. But a myth is not a lie, it is an attempt to account for an actual condition. The fact that

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"men are not like sticks and stones," or even the beasts of the field and jungle is one of the most obtrusive facts of experience. But this fact can be accounted for without splitting up existence into discontinuous orders or realms, and therefore increasing the mystery rather than clarifying the fact of man's purposeful activity. The mental is an observable property of man's activities as a symbol-using social being.

In our subsequent discussion we shall attempt to show how this conception of the mental implies giving the observable a broader meaning than it has in Knight's theory of knowledge. Even more fundamentally, it involves a synthesis of the two kinds of intelligence, the instrumental rationality of science, and social procedure, the joint activity of social individuals aimed at a consensus about "valid values."

(3) Motives As Dispositions(a) scientific laws as habits of nature

We must reconsider Knight's motive-force analogy, and indicate how a different view of the nature of motive statements can lead to a different idea of the possibility of a scientific approach to social problems.

As we have seen, Knight believes that a scientific treatment requires a passive subject matter, or, what is the same thing, the active inquiring mind cannot be part of its own subject matter. The knower and the known cannot belong to the same order of existence. "If we could write economics as observed from some other planet, and if we never published the results on earth, economics would come nearer to being a natural science."¹

But modern experimental science does make knowing a transaction between an active knower and that which he comes to know, an encounter that affects both the knower and the known. Knowing is not a process that goes on within the mind, it is a form of directed activity. Scientific activity is not dispassionately observing and then describing an unchanging and unchangeable environment. On the contrary, "the idea is active." Subject matter is transformed through being known.

Thus we have a different meaning of observation, of experience, of warranted belief, and even truth. The warrant of valid knowledge is prospective and eventual, it depends not

¹ Intelligence and Democratic Action, p. 73

on antecedents but on consequences for action. Thought does not aim to conform to or to reproduce the attributes already possessed by objects, but to judge their potentialities for future development.

Let us consider this proposition. Not only does "force" correspond to nothing that can be seen or touched or heard-- that is, observed as Knight understands observation--but this is true of all the concepts that enter into classical mechanics. No one has ever seen a "point mass," no one has ever determined the "instantaneous velocity" or the "instantaneous acceleration" of a body. Nor is it useful to think of these theoretical notions as the end products of a process of abstractive elimination out of the "buzzing booming confusion" which Knight says is the form of "experience in the raw."¹ The laws of theoretical mechanics are not "generalized descriptions"² of phenomenal sequences and uniformities.

To be sure, the words observation and description are vague in ordinary usage. A creative writer might be said to be simply describing some natural event in nature, such as a sunset or a thunderstorm. But he is no passive spectator. He seeks to evoke in his reader the feeling which gave to this event its unique quality as an experience, and this entails careful selection and interpretation of his observations. The

¹ Ethics of Competition, p. 96

² See, e.g., "Salvation by Science" (1947), reprinted in History and Method, p. 237, for a characterization of the method of positive science as "generalized phenomenal description."

scientist seeks to formulate laws which have the property of generality. He cannot possibly be regarded as merely describing in the same sense as the artist, since his laws are not concerned with the qualitative uniqueness of particular situations. The law of falling bodies describes the behavior of nothing that can be observed in nature, where bodies fall against the resistance of air pressure. It "describes" an idealized situation that could never occur in actuality. If an economist claims that the proposition, "each agent of production receives a reward equal to the value of its marginal product," is purely "descriptive," he is using the term in the second sense. The proposition holds only under the idealized, practically unrealizable, conditions of perfect competition, which Knight claims involves the possession of perfect knowledge by all the market participants.

As Knight uses the word, description is opposed to "interpretation." The mind must contribute nothing to what is observed. It is not easy to reconcile this required passivity of the mind in observation with the generality of the allegedly "descriptive" laws. For this generality could be realized only through discriminative selection of data, and not passivity. Knight's resolution of the difficulty, as we have seen, is through his doctrine of the consistency of the forms of thought with pervasive structural properties of nature. The abstractive power of thought puts mind in contact with these structures, which it then merely "describes."

But according to modern experimental science, laws do not provide knowledge about the sensory qualities of objects. Scientific laws are formulations of relations among objects; distances, velocities, and accelerations are relational ideas. The test of the laws is not their correspondence with aspects of a pre-existing environment but in the powers of prediction and control over nature which they confer. They provide a language for analyzing changes in the mechanical properties of systems.

On this conception of the laws of motion, what becomes of Knight's proposition that force is an uneliminatable animistic residue in the system of theoretical mechanics? This idea is coherent only on condition that the scientist regards his task as dispassionate description of a passively observed process. Charles S. Peirce wrote:

In how many profound treatises is not force spoken of as a "mysterious entity," which seems to be only a way of confessing that the author despairs of ever getting a clear notion of what the word means! In a recent admired work on Analytic Mechanics it is stated that we understand precisely the effect of force, but what force itself is we do not understand! This is simply a self-contradiction. The idea which the word force excites in our minds has no other function than to affect our actions, and these actions can have no reference to force otherwise than through its effects. Consequently, if we know what the effects of force are, we are acquainted with every fact which is implied in saying a force exists, and there is nothing more to know.¹

On this Peircean pragmatic view of scientific validity,

¹ "How to Make Our Ideas Clear," Buchler (ed) Philosophical Writings of Peirce, pp. 35-6

it adds nothing to a law to be able to convert the theoretical ideas into sensuously recognizable aspects of the environment. Laws are leading principles or inference tickets which state relationships between propositions referring to matters of fact. Their descriptive realism is irrelevant.

In this light, the laws of mechanics are analytical devices for symbolizing and representing the motions of objects. For example, the parallelogram of forces is a method for symbolizing velocities and accelerations as lines, and by means of vector analysis, compounding accelerations or resolving an acceleration into several component accelerations.¹

Thus it is possible to analyze the single actual movement of a planet about the sun as the resultant of two component forces. One of these is a tangent to its orbit, and is in accord with Newton's first axiom: "Every object remains in a state of rest, or in uniform motion along a right line, unless compelled to change that state by impressed forces." The other component is directed to the center of mass of the planetary system. The alterations of the motion of the planet along its orbit are due to this second component, which in this example has the form of the Newtonian law of gravitation.

Physicists have debated whether Newton's second law (or axiom), which holds that the "alteration of motion is ever proportional to the motive-force impressed; and is made in the direction of the right line in which that force is impressed"

¹ ibid.

is a refutable empirical law, a convention, or a definition of force. The law states a relationship between force, mass and acceleration, $f = ma$. Modern opinion appears to believe that it is not a refutable statement, but rather a rule of procedure, a method of representing data for the purpose of analyzing motion.¹ The axiom gives the form of a relationship. In order to apply it, one must specify a force-function. One such function takes the form of the Newtonian law of gravitation, but there are an indefinite number of other force functions, including those applicable to the motions of elastic or fluid bodies. When the appropriate force function has been specified, one has a relationship between the relevant parameters of the system under investigation, variables such as space-time relationships and constants such as those of mass. But then this relationship is stated in equations that make no mention of such terms as force or cause. Force is therefore a generic term descriptive of a kind of relationship stated in a class of mathematical functions. There is no suggestion of animism or of a dynamic agency in this account of the term.

In fact, the whole problem of the observational status of individual scientific terms, out of the context of the theory in which they appear, drops out when one substitutes an interpretation of scientific laws as instruments for an interpretation of them as descriptions.

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¹ Ernest Nagel, The Structure of Science, p. 190-1

Modern science is concerned with experience, but it is what can be rather than what has been experienced. Since scientific laws do not describe a dead past but look forward to a still undetermined future, a science cannot be a mere record or summary of the established truths of some area of knowledge, otherwise there could be no growth of knowledge. Scientific laws have to go beyond the actual to take account of the possible. It is of importance for our analysis of the logic of explanations that refer to human motives to pay some attention to the nature of statements expressing scientific laws.

Laws can be stated in a number of ways, but they can always be translated into the conditional if-then form. Newton's law of gravity expresses an if-then relation between being material and being reciprocally attracted. Laws are hypothetical propositions which belong to the broader class of modal statements or dispositional expressions.

A modal expression is a statement of a way of acting or a tendency or ^{ne} ~~pro~~ness to act in certain ways. A modal expression can usually be paraphrased with a sentence containing "can" or a noun with a suffix like "-ible" or "-able." It is the kind of sentence usually stated in response to the question "how?" as opposed to "what?" We speak of iron as malleable, the climate as changeable, the dog as excitable. When we use such adjectives, we are speaking of the ways the metal, the weather, the animal can be expected to behave.

What is the empirical status of modal expressions? It is clear that to say the dog is excitable is not to refer to any specific act of the dog. Modal expressions do not report individual events that could, for instance, be photographed, though the instances of the tendencies they describe may be photographable. They do not necessarily refer to a well specified act. The malleability of iron is a fairly specific property which can be exhibited only in a fairly limited range of acts, but the changeability of the weather and the excitability of the dog are characteristics that correspond to a fairly broad, somewhat ill-defined, range of performances.

Modal expressions refer to potentialities rather than actualities. To say that something can be is not to say that it is, it is only to say that it is incorrect to say that it is not. Therefore, if true statements refer exclusively to actualities, that is, report the existence of particular objects or the occurrence of individual events, then modalities are not statements of a kind that can be called true or false. But then this would rule out the claim of scientific laws to be regarded as true or false, since they refer to no individual instances. They are stated in sentences which are sophisticated examples of the large class of expressions that report modes of activity.

A law can usually be represented in the form of a generalized conditional, "For any x, if x is A, then x is B." The prefix to the if or antecedent clause has the effect of eliminating reference to any particular instance of the law, so

that what is stated is a form of relationship rather than a report of a fact. The law expression is a statement form rather than a statement. We have a mode of procedure for inferring to particular matters of fact from a knowledge of other matters of fact. Laws have been called habits of thought.¹

Though scientific laws are usually regarded as statements which can significantly be judged true or false, they belong to a different level of discourse from the particular instances to which they apply. The language we use to describe and to explain nature and experience does not consist exclusively of simple indicative sentences of the "Here is a . . .," "That is a . . ." pattern.

Hume's skepticism, endorsed by Knight so far as scientific method is concerned,² is the end product of pushing to its logical conclusion the Lockean view, that experience on which science is based is a succession of particular impressions imposed on a spectator mind. The fact that a pair of impressions have been associated in the past does not guarantee they will be associated in the future. The fact that the sun has risen every morning of a man's life gives him no more warrant for saying it will rise every morning all the rest of his life than that he will live as long as the sun rises. Since there is no rational ground for associating impressions as cause and effect, we must conclude "that all our

1 C. S. Peirce, "What Is a Leading Principle?" Buchler (ed) op.cit., pp. 229 & ff., John Dewey, Logic, Ch. XIII

2 "Economic Psychology," op.cit., pp. 93-4

reasonings concerning causes and effects are deriv'd from nothing but custom; and that belief is more properly an act of the sensitive than of the cogitative part of our natures."¹

This Humean skepticism follows from the assumption that science is an attempt to compile a record of what has been experienced rather than to guide us to what can be experienced. On the latter view, our interest in what exists is mainly on account of the possibilities such knowledge offers for future experience. The directly observed is of value as an indication of what has not been experienced.

Modern experimental science moves Hume's "mysterious tie" of habit from the "sensitive" to the "cogitative part of our natures." A habit is a way of acting, including a way of arguing from premise to conclusion. Science gives ways of acting symbolic formulation as possible operations. Then the results of these operations serve to test the ideas, the proposed plans for action expressed as propositions. The man who believes the sun will rise tomorrow only because it always has risen has not based his expectation on knowledge derived from methods of rational inquiry. For this, he must make use of knowledge of relationships of the kind provided by celestial mechanics, and this knowledge is the product of active inquiry, including the use of instruments like telescopes. It is not yielded to passive perception.

¹ David Hume, A Treatise of Human Nature, Part IV, Sec. 1

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The most helpful analogues for understanding science are not drawn from such activities as photography. A science is more like a language for explaining our dealings with nature. The point for present purposes is that the language must include forms for expressing ways of acting as well as reporting occurrences.

A discussion of the logic^{of}/modal expressions is relevant to an appraisal of Knight's ideas for this reason. Many, though not all, of the statements that we make when we talk about human character and intelligence belong to the general category of modal expressions. A man's character consists of his propensities, inclinations, tendencies. When we say he is ambitious, lazy, or shy we are referring to ways of acting. His intellect is demonstrated in his abilities, capacities, skills. When we say he is witty, talented, clever, we are discussing observable characteristics of his overt performances. On a nominalist view that the world is made up of individual impressions, objects or "things," it is natural to assert that exercises of thought, feeling or will take place on another level of existence, where they can be observed only in a metaphorical sense, through introspective insight. But if the language that we use to describe and explain all of nature must contain, in addition to simple indicative sentences stating that/particulars have this or that/attribute, forms for stating tendencies and possibilities, then we need not abandon tested methods of rational inquiry when we turn our attention to human con-

duct.

Knight provides an excellent illustration of a nominalist interpretation of modalities.

We have no objective identification marks for moods and tempers, as shown by the fact that description of them runs practically in terms of the conduct to be anticipated. We say a person or a crowd is in the mood for certain acts, or in the frame of mind where such and such things are likely to happen. We make the prediction of behavior directly, unconscious of the objective character of the "data," and use it to characterize the latter. Such expressions as a "ugly" or "jovial" mood have really no deeper or different meaning, they suggest conduct rather than identifiable marks from which conduct is to be predicted. We predict by simply "knowing," without any conscious process of inference, what to expect.¹

To say we have no way of identifying a mood or a temper save by the type of conduct, and therefore can say nothing "objective" about such states, is to assume that the mood or temper goes on in another place, or on another level from the overt conduct. But moods and tempers are the names of (transient) dispositions. They refer to a pervasive quality in the behavior of a person or crowd, over some limited period. They are the shouts and pushings that crowds do when they are in an "ugly" mood, or the laughter and singing of the "jovial" mood, not states of mind that occur simultaneously in a place where they can never be seen. In the same way, the elasticity of a rubber ball is the way it reassumes its shape after having been pressed, bounds back from the floor when thrown; the excitability of the dog is the way it barks at strangers, jumps

¹ "The Limitations of Scientific Method," op.cit., p. 123

when spoken to, and so on through a list of related acts. If we know that the dog is excitable we are able to predict and explain his behavior, which does not mean write out in advance his every movement, but to be prepared for the kinds of response he makes to changes in his environment. We are not surprised when he tries to attack the stranger.

* * * * *

It will be helpful to express our ideas about the logical status of expressions referring to motives and forces in the framework of John Dewey's and Arthur F. Bentley's classification of the stages of scientific thought, as self-actional, inter-¹actional, and transactional.

The notion of motives as forces belongs with a conception of scientific investigation as a search by a spectator mind for efficient causes. The motive-force analogy fits in with the interactional stage of scientific thought. This is the stage that was ushered in with Galileo's identification of the principle of inertia. The principle was later incorporated into Newtonian mechanics as the first law of motion: If no unbalanced force acts on it, a body will remain at rest, or if in motion it will continue to move with undiminished speed in a straight line. This idea destroyed the whole structure of the universe as it had been conceived in ancient and medieval thought.

¹ Knowing and the Known (1949), Ch. IV

Pre-Galilean explanatory schema were self-actional.¹

All motion required a mover who exercised his will. The role of desire in the movements of living beings was parallel to the role of the immovable mover who moved the celestial bodies.² But according to the idea of Galileo, a body that is not moved by another will move with constant speed along a straight line into the infinite, if no obstacles intervene.

When to the first law of motion there was added the second law concerning the direction and proportionality of force, and the third law, that action and reaction are equal and opposite, the interactional system of mechanics was complete. The world is viewed as a process of "simple forces between unalterable particles . . . the earth and the sun, though so far apart, were both actors in the play of forces . . ." Motion was not attributable to acts of will, but to the interactions of material bodies. Yet within the interactional explanatory schema, the fundamental notion of force itself

1 ibid., p. 108

2 Aristotle's On the Movement of Bodies starts with the movement of living organisms in order to work up to understanding the motions of celestial bodies. "We see that the living creature is moved by intellect, imagination, purpose, wish and appetite. And all these are reducible to mind and desires . . . In one regard that which is eternally moved by the eternal mover is moved in the same way as every living creature, in another differently. While celestial bodies are moved externally, the movement of living creatures has a termination." (i.e., a purpose or goal.) Quoted by Philipp Frank, Philosophy of Science, p. 97

3 Albert Einstein and Leopold Infeld, The Evolution of Physics (1938), quoted by Dewey and Bentley, op.cit., p. 111-3.

presents the difficulty that it is not observable as an interaction between material bodies. It is something added to what is held to be pure observation of the sensible objects. The efficient causes of movements are assigned on analogy to our own conscious experience of effort. Forces and causes are a source of intellectual discomfort within the interactional framework because they are regarded as residues from the now outmoded self-actional phase of explanation. Their retention is taken by Knight and others as evidence that the program of science cannot be fully realized.

The alleged problem of the epistemological status of force or cause vanishes when we arrive at the transactional stage of explanation.¹ This corresponds to the post-Darwinian principle of continuity, which puts mind within nature. The knowing relation is not one of action and reaction between mind and an external world, existing on separate levels, an adjustment of inner to outer relations.² "Our position is simply that since man as an organism has evolved among other organisms in an evolution called 'natural', we are willing under hypothesis to treat all his behaviors, including his most advanced knowings, as activities not of himself alone, nor even as primarily his, but as processes of the full situation of organism-environment; and to take this full situation as one which is before us within the knowings, as well as being the situation in which the knowings themselves

¹ Dewey and Bentley, op.cit., Chs. IV and V

² See above, Chapter One, for a discussion of Herbert Spencer's theory of knowledge.

arise."¹

At the transactional stage, relations as well as particulars are regarded as within experience. One of these is the subject-object relation. Another is the causal relationship. Causes are not dynamic agents, but relationships among events. ". . . no event comes to us labelled 'cause' or 'effect'. An event has to be deliberately taken to be cause or effect Given the problem of resolving a gross and indeterminate succession of observed qualitative events into a continuous history, there is sufficient and necessary ground for taking one event as 'effect' or consequent, and some other as antecedent or 'cause' The evidence is conclusive that the category of causation accrues to existential subject-matter as a logical form when and because determinate problems about such subject-matter are present All propositions about policies to be pursued, ends to be striven for, consequences to be reached are propositions about subject-matter having the formal relation means-consequences, and are . . . causal propositions." The "ontological interpretation" of causation must be abandoned (that is, the idea of cause as an independent existence, an agent), but in this way "recognition of the value of the causal category as a leading principle of existential inquiry is in fact confirmed."² The causal relation is one that ac-

¹ Dewey and Bentley, op.cit., p. 104

² The quoted passages are taken from John Dewey, Logic: The Theory of Inquiry (1938), Ch. XXII, pp. 459-62

crues to subject-matter within inquiry. It develops out of the transaction which is the experience of knowing.

Therefore, from this point of view the idea of motives as forces or causes belongs with an archiac view of scientific method. John Dewey wrote:

Were it not for the inertia of habit . . . it would be astonishing to find today writers who are well acquainted with the procedure of physical science and yet appeal to 'forces' in explanation of human and social phenomena. For in the former case, they are aware that electricity, heat, light, etc., are names for ways in which definite observable concrete phenomena behave in relation to one another and that all description and explanation have to be made in terms of verifiable relations of observed singular events. They know that reference to electricity or heat, etc., is but a shorthand reference to relations between events which have been established by investigation of actual occurrences. But in the field of social phenomena they do not hesitate to explain concrete phenomena by reference to motives as forces (such as love of power), although these so-called forces are but reduplication, in the medium of abstract words, of the very phenomena to be explained.¹

* * * * *

When we arrive at the transactional stage of scientific investigation, what is the logical status of statements assigning motives? Is there a corresponding change in the logical status of these statements when scientific investigation is looked on not as a search for efficient causes, but for causal relationships?

¹ Freedom and Culture (1939), p. 32. Wesley C. Mitchell urged business cycle theorists to give up looking for "the cause" of business cycles, and concentrate on the "functional relationships" revealed in time series. "In the progress of knowledge causal explanations are commonly an early stage in the advance toward analytic description." Business Cycles: The Problem and its Setting (1927), p. 55

The difference in the meaning of expressions assigning motives at the two stages of scientific investigation can be related to the change in the logical status of possibility. The interactional stage is characterized by a "denial of possibility" because it identifies physical reality with the unchanging particles of Newtonian science. Possibilities and contingencies exist only "in the mind;" knowing is a matter of removing error or "making up the mind," the latter belonging to another level of existence from that of the unchanging objects of knowledge. The interactionist is a nominalist. The reason for Peirce's vigorous rejection of nominalism and his proclaiming himself a "scholastic realist of a somewhat extreme stripe" was because he believed the nominalist ruled out the dimension of possibility from existence.¹ The nominalist error was in "holding that the potential, or possible, is nothing but what the actual makes it to be."² For example, the solubility of salt is a power that inheres in the salt whether it is ever placed in water or not. One does not exhaust the meaning of the term solubility by reporting the actual occasions on which salt was dissolved. But to hold that "possibility is a mode of being" is not to maintain that the world contains a class of possible objects in addition to the actual objects. It is only to maintain that one may report ways of acting (habits, tendencies, potentialities) in

1 "Pragmatism in Retrospect," Buchler (ed) op.cit., p. 274

2 "The Principles of Phenomenology," ibid., p. 85

sentences that are factual, can be tested by experience, and yet are not reducible to statements reporting individual instances of that way of acting.¹ The condition for the knower to be active is that such possibilities exist. When potentialities are stated as hypotheses and tested, the inquirer changes the possible into the actual. The transactionist moves the possible from the mind of the knower to the situation from which inquiry begins. The successful conclusion of inquiry is marked, not by one's "making up his mind," but by his having acted to resolve a confused situation.

When we assign a motive to an act, we are relating the act to a trait of the actor's character. Character traits are described by terms that name ways of acting, that is, possibilities that are actualized in a range of particular acts. "Greed was his only motive for stealing." The thief's crime is related to a propensity that accounts not only for this act, but an indefinite range of acts--a rudeness, an occasion when he overate, another when he cheated. The pattern of explanation is not that of finding an efficient cause but of reasoning to a mode of behavior.

We learn of these propensities through ordinary observation and intercommunication. Such observation is not a matter

¹ Peirce's "scholastic realism" is dispositional or relational and not substantial as is the case with the scholastic doctors. He does not treat ideas like "manhood" or "triangularity" as substances. His claim is that we can give factual answers to questions asking how? as well as those asking what? or whether? and the former are not reducible to the latter.

of receiving a sensory impression on some isolated occasion. The individual's greed could not be photographed or weighed or measured. But a skillful judge of human nature is one who knows how to devise observational procedures which will reveal these traits of character. A reliable judgment requires sustained observation and testing. Even the most careful observation will provide only probable knowledge, subject to correction by watching the individual's further course of conduct. So it is that we learn about our own motives and the motives of others through a kind of observation and analysis which is an elementary proto-type, but still a stage, in a continuous developmental process which has finally evolved the elaborate inductive methods of modern science. On this account of the nature of motive statements we can question the assertion that the truth of social science is "related to sense observation . . . in a different way from that arrived at by the methodology of natural science."¹ "Sense observation" as opposed to systematic observational procedure has no role in either the natural or the social sciences. Knowledge is not built up out of sense impressions.

Motivated conduct is the behavior of a rational individual who is acting purposefully. Judgments of reason or intelligence are involved in motive ascriptions. We do not discuss the motives of sticks and stones, animals or infants.

At the interactional stage, rational action is appropri-

¹ "What Is Truth?" op.cit., p. 155

ately represented in the means-end schema, the means and ends belonging to the physical and mental orders, respectively. The motive which acts as efficient cause is a present desire for a future end. The degree of rationality is a function of the effectiveness with which present means are employed to realize given ends. Knight leaves unquestioned the appropriateness of this schema for representing his individual or instrumental rationality. However, he emphasizes that we never apply it in the appraisal of any motivated act, because we have no way of acquiring the necessary data. The desires that motivate conduct are feelings which cannot be observed or measured, and the end is in a continuous state of redefinition throughout the course of action. Indeed, Knight says that "the behaving subject himself, not to mention any outside observer" can never know, even after the fact, whether he himself acted rationally, "and it is even less possible to repeat the choice experimentally with controlled variations."¹

Yet we frequently make judgments about the intelligence of our own and other's actions, and communicate such judgments to listeners who understand what we mean. What is the basis of these judgments?

Since the transactionist denies the existence of a separate order of mental reality, for him intelligence is not predicated of decisions or acts of choice performed "in the mind." When we speak of intelligence, we are talking about a

1 "Marginal Utility Economics," Ethics of Competition, p. 160

competence, skill or a capacity. An intelligent person knows how to do various things. The algebra teacher calls the pupil intelligent. His reason is not that the boy came up with the right answer to this problem. He might do that through lucky accident. But the teacher has watched the pupil learn to avoid mistakes in his reasoning. so now he can repeatedly produce correct answers to problems. The teacher is not inferring to acts of calculation performed in the student's stream of consciousness. He is subsuming an individual performance--getting that right answer--under a permanent capacity in a manner analogous to a physical scientist's subsumption of an observed change under a law--a "habit"--of nature.

Judgments of intelligence are therefore judgments of how an activity is carried on, and are properly made by judges themselves skilled or knowledgeable about the activity under scrutiny. A skilled physician passes judgment on the practice of a recent graduate. A music critic rates the performance of a violinist. Can these judgments be expressed in the terminology of the traditional means-end schema? Consider the case of a scientist planning and performing an experiment, an activity all would agree is an exercise of intelligence. A competent judge might make separate judgments, one with respect to the reasonableness of the experimenter's objective and another with respect to the efficiency with which the experiment is conducted. One might then say that the first was a judgment of the end, the second of the means. But these

are two kinds of judgment: of an indivisible performance. They do not refer to two kinds of data, means belonging to the physical order, and an end existing only in the mind.

An activity takes on the attribute of intelligence when the actor is not just passively responding to a stimulus, but is thinking what he is doing, exercising judgment, attempting to improve his performance. Indeed, what we mean by an intelligent or rational being is one capable of learning from experience, so that its future will be different from its past. Its habits are not mere reflexes. They can be placed under critical scrutiny and redirected, they are therefore more flexible and adaptable.

From these considerations it follows that no act which is clearly an exercise of intelligence is fatalistically predetermined. Neither the observer nor the individual who is designing an experiment, composing an essay or solving a problem could ever write down in advance all the steps in the procedure and the final result. Both the actor and the observer, having learned from the experience, will be, at least in some minor ways, different persons at the completion of the process. This quality of openness which any intelligent performance has by its nature is the basis of Knight's contention that procedural activity is, in principle, unpredictable.

He takes account of these aspects of intelligent action in his doctrine that all motivated conduct involves error.

The motive which is the present desire for a future end cannot be determined by observation of the achieved result, because it is a condition of motivated conduct that "motives as inferred from their 'effects' and motives as known directly by 'internal observation' do not . . . correspond."¹

But according to the transactionist there is no inconsistency in saying that a course of rational conduct is both understandable and predictable, and yet characterized by contingency. One who watches a skillfully played chess game must, if he enjoys it, be able to predict many aspects of the players' performance, and yet be uncertain about the outcome. The observer of an intelligent performance interprets the procedure in terms of a competence or skill. Such capacities are determinable rather than determinative; that is, they are consistent with a range of particular actions.

Moreover, Knight's point that all rational conduct is characterized by error fails to convey what we mean by the open quality of activity that involves learning. The notion of error is applicable to choices among alternatives or to miscalculations about existing states of affairs. The chooser may make an error and select the wrong alternative, and then we can say he made a mistake. But the composer of a poem or the designer of a scientific experiment does not regard his activity as a series of choices among existent alternatives. Perhaps his performance will be inadequate, and he will hope

1 "What Is Truth?" op.cit., p. 169

to do better next time, but one would not be using language with precision if he described the outcome as an error or a mistake. The end of his activity--in the sense of the plan that governs his present action--is the creation of a work of art or the discovery of new knowledge. A broad range of possible outcomes would correspond to a satisfactory achievement of his objective and these would shade by degrees into the outcomes he would regard as disappointing, on the one hand, and those that exceed expectations on the other. To none of these would the notion of error be appropriate. Nor would it be correct to say he was acting unpredictably.¹

The identification of contingency with error--with a mistaken choice or miscalculation about existing alternatives--has the effect of confining possibility to the mind. Liability-to-err separates the motivated from the caused. "The presence of error in these mental processes . . . seems to be an earnest of their non-mechanical character . . . machines . . . do not make mistakes."² The intention of the classification is to emphasize the creative power of thought. But the paradoxical result is to make the knower a passive spectator. He does not act in the knowing process--he only "makes up his

¹ Bergson, asked to discuss the future of French dramatic literature following the first World War, said "If I knew what was to be the great dramatic work of the future, I should be writing it." (The Creative Mind, p. 100) Knight's contention that procedural activity is in principle unpredictable assumes that predicability means predestined in this sense.

² Risk, Uncertainty and Profit, p. 202

mind." We shall find this point significant for an appraisal of Knight's theory of profit, which associates the entrepreneur with uncertainty.

(b) the profit motive

When an economist explains a course of action in terms of a profit motive, is he subsuming it under an economic principle derived from "the reality of economizing, or economic behavior, the general meaning of which is known to any possible participant in any economic discussion 'intuitively' . . . " ¹?

It seems more reasonable to account for the ability to participate in economic discussion by analogy with the example Knight uses to explain social procedure, the discussion by the players of the rules of a game. ² In order to discuss intelligently the possibility of changing the rules, the discussants must know how the game is played at present. And this means understanding the complex of attitudes and interests that make the game seem interesting and winning seem worth-while. These attitudes and interests constitute the players' patterns of motivation. These motives are observed in the kinds of moves the players make and the expressions they use to explain their reasons for making them. If one knows the players' motives, together with the present rules, he can follow the game, make sense of the various moves, anticipate the probable reactions of the players, and explain to a newcomer who has never watched it before how the game is played. None of this is a matter of inference to the psyches of the players. One learns of interests and strategies through intelligent observation and partic-

¹ "What Is Truth?" op.cit., p. 163

² "Science, Philosophy, and Social Procedure," op.cit., p. 209

ipation. It is not "intuited" knowledge.

By analogy, the profit motive is the complex of interests that motivate the players in what is often called the game of business. Economic analysis is like the continuing discussion of appropriate strategies and rules of a game being played under changing conditions. The results of a continuing analysis can never be a closed body of self-evident truths.

The game analogy seems consistent with the project of advancing economic theory from the interactional stage of scientific thought to the transactional stage. This movement involves the abandonment of nominalism, and "those daughters of nominalism--sensationalism, phenomenism, individualism, and materialism."¹

The transactional point of view requires repudiation of the idea of immediate knowledge of the workings of our own minds--and therefore a denial of the existence of Knight's "third field" of knowledge. We learn of our habits, dispositions and capacities in much the same way we learn about the characters and personalities of others. However, the fact that knowledge of mental or emotional experience comes from ordinary inductive procedures does not involve commitment to the type of Watsonian behaviorism which Knight and other anti-scientists regard as the sole alternative to the technique of

¹ C. S. Peirce, "A Critical Review of Berkley's Idealism," Philip Weiner (ed) Values in a Universe of Chance, p. 87

"sympathetic introspection,"¹ the projection of our intuited thoughts and feelings into the bodies of other persons. In fact, psychological behaviorism of this type belongs to the interactional stage of scientific thought. It retains the fundamental dualism between the mental and the physical, the two orders allegedly "interacting" in various ways. The behaviorist proposal to base the behavioral sciences on observation seems to be a program to accept as scientific data only observations drawn from the so-called "physical order."

For example, James's biological theory of emotion--"we feel sorry because we cry, angry because we strike, afraid because we tremble"--is, according to the transactional approach, superficial in its suggestion that emotions can be exhaustively described in terms of bodily sensations accompanying physical movements. To say of an individual that he is angry or sorry is not to report any kind of occurrence, such as a bodily state or movement or feeling. To be angry or sorry is to have a proneness to act and to express oneself in certain ways. Anger and sorrow refer to dispositions not episodes. They name a quality that dominates all one's activities on particular occasions, but is not reducible to any one of those activities.

Thus, the transactional approach implies rejection of a crude behaviorism as well as all variants of Wieser's "psychological" method. The individualistic psychology of consciousness is replaced by a study of the formation of habits

¹ "What Is Truth?" op.cit., p. 162

and character within an institutional environment. But economics is not "based on" psychology, either individualistic or social. The idea of one science based on another suggests a deductive elaboration of postulates which are taken as non-problematic within the borrowing science, and subject to scrutiny only by the lending science. The economist does not, as a matter of professional prerogative, turn over a set of questions to the practitioners of an insulated science of psychology, and then devote his efforts to his own specialty, to distill his own brand of self-contained truth.¹

¹ Thus Knight expresses the characteristic interactional position when he writes that the economist must exclude all "feeling facts" from his science, which he must base exclusively on "behavioristic observation," treating "motives as forces," because knowledge of such facts, "in so far as it gives verifiable information, contradicts . . . that furnished by the first source. Therefore economics, in dealing with these data also, would be trying to ride two horses at the same time over courses too divergent for comfort. It is better to leave distinct sets of data to different sciences; and the facts of consciousness and their relation to the facts of behavior form the province of the already well established disciplines of psychology and ethics." ("Economic Psychology," op.cit., p. 86) This is the interactional position that the elements entering a problem have been adequately described, named and classified in advance of inquiry, while "transaction is inquiry which ranges under primary observation across all subject matters that present themselves, and proceeds with freedom toward the redetermination and re-naming of the objects comprised in the system." Dewey and Bentley, op.cit., p. 122

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The significance of the transition from interaction to transaction can best be brought out by this consideration. We have no immediate, intuitive awareness of our own thought processes to which the subjective value theorist can refer in validation of his theoretical conclusions. But in compensation for this loss of privileged access as observers of our own mental and emotional processes, we gain an ability to observe the mental life of other individuals, as well as the behavior of crowds, legislatures, and voting majorities. We are even able to observe and use as scientific data such developments as changes in the general price level, the Gross National Product, or Aggregate Consumption Expenditure. These latter cannot be represented as "sensible objects" or "immediate data of consciousness," but from the transactional point of view, there are no such objects and no such data. Index numbers and measures of aggregate business activity are theoretical constructions which must be incorporated into theoretical systems and used in the analysis of concrete problems. But the empirical validity--the correspondence with "reality"--of such theoretical constructions does not depend on our ability to relate them or to reduce them to the maximizing functions of finite individual minds. It depends on our success in using them in the prediction and control of economic life. This is the consequence of the change in what is meant by "reality" when one no longer identifies it with

the "immediate knowledge" that exists prior to inquiry but with the "opinion which is fated to be ultimately agreed to¹ by all who investigate."

¹ Charles S. Peirce, "How to Make Our Ideas Clear," Buchler (ed) op.cit., p. 38

(c) anti-hedonism

We shall conclude our discussion of Knight's views about the logical status of statements assigning motives with a brief discussion of his contribution to the debates concerning the alleged hedonist foundation of orthodox economics. Like the institutionalist economists, Veblen and Mitchell, Knight has attacked hedonism as the psychological basis of economic theory. One might think that Knight was joined in common cause with Veblen to purify economics of hedonist elements. But since Knight's interpretation of both "hedonism" and "psychology" has little in common with Veblen's, this suggestion of a common front would be misleading.

The two criticisms of hedonist psychology correspond to the two contradictory themes in William James's psychology, discussed in our historical review. Veblen takes the point of view of the post-Darwinian principle of continuity, and criticizes hedonism along with all individualistic psychologies of consciousness. Knight writes from the point of view of the free will indeterminist, and attacks hedonism along with all scientific ethical systems, but as we shall see, his reasoning leaves unquestioned and in fact proceeds from an individualistic psychology of consciousness.

Mitchell described how, during the last decade of the nineteenth and the first decade of this century, economists sought to alter their terminology so that it would be free

from hedonist implications.¹ In the historical review, we attempted to relate this development to a broad cultural movement of the later nineteenth century, extending across a number of areas of cultural life, which took the form of a revolt against mechanistic determinism of the Spencerian type. Irving Fisher was among the earliest economists who "protested against the foisting of (hedonist) psychology upon economics" by such economists as Hermann H. Gossen, W. Stanley Jevons and Francis Y. Edgeworth. Fisher called this "inappropriate and vicious."² Fisher's procedure was to argue that the economist's concept of utility could be derived from the fact of desire without inquiring into the content of desire. This could be "pleasure, duty, fear or any other state of consciousness." We have noted similar views of Philip H. Wicksteed. Joseph A. Schumpeter³ and Herbert J. Davenport⁴ were among those who identified themselves with this position. Thus the utility calculus was held to be independent of any psychological assumptions.⁵

1 "The Role of Money in Economic Theory," op.cit.

2 ibid., p. 155. See Fisher's Mathematical Investigations in the Theory of Value and Prices (1892)

3 History of Economic Analysis, Appendix to Ch. 7

4 Economics of Enterprise (1913), pp. 97-102

5 A more recent statement, this time by a sociologist, of this position is contained in Talcott Parson's "The Motivation of Economic Activities," (1940), reprinted in Essays in Sociological Theory.

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The position from which Mitchell criticized the psychological foundations of orthodox economics corresponds, at least in a general way, to what we have called in the previous section the transactional approach.¹ He is expressing the transactional point of view when he writes that the economist "does not need a set of preconceived or borrowed notions about the character of human motives Instead of starting with a set of motives and showing how human beings thus constituted may be expected to act, he can inquire how actual men conduct themselves. Knowledge of current psychological viewpoints and methods improves his equipment for this task and safeguards him against making naive errors; but he should not expect the psychologist to solve the riddles of economic behavior. Economic theory . . . becomes part and parcel of the social psychology we are gradually developing through the cooperation of all the social sciences."² He indicates his agreement with "one of Dewey's favorite sayings,

¹ This term was used by John R. Commons in his Legal Foundations of Capitalism (1924) and his Institutional Economics (1934) in a manner similar to its use in the text. He speaks of a "transactional" approach as one that focuses not on individual psychology or on physical commodities or labor, but on "collective action which sets working rules" (Institutional Economics II, p. 523). John Dewey used it in "Conduct and Experience in Psychology," (1930), reprinted in Philosophy and Civilization, though the essential features of this idea go back to his early essay, "The Reflex Arc Concept in Psychology," (1896), reprinted, op.cit., under the title, "The Unit of Behavior."

² "Economics 1904-1929," op.cit., p. 408

'There is no psychology but social psychology'.¹ There is no individualist psychology of consciousness to supply the axioms for the deductive science of economics. When the economist turns over to the psychologist all questions about the content of motives, though he retains the idea of "motives as forces" or the present desires for calculated future pleasures (satisfactions, utilities), he has taken his position in the interactional stage of scientific thought. His treatment is mechanical. He has retained the substance of the hedonist psychology, even if he has put aside the terminological garments of the hedonist.

* * * * *

The beginning of the transactional point of view in American thought is properly traced back to Charles S. Peirce's essays of the 1860's, questioning the existence of "certain faculties claimed for man," such as powers of introspection, intuition and thought without signs.² It is further evident in the development by Veblen, Dewey and Mead of James's functional psychology into a social psychology of habit. Veblen stresses the biological basis of mental and emotional life. The mental is continuous with the biological though it is not reducible to biological factors. Jacques Loeb had shown that to analyze the biological basis of thought and emotion did

¹ "Research in Social Science," op.cit., p. 79

² "Questions concerning Certain Faculties Claimed for Man," and "Some Consequences of Four Incapacities," Journal of Speculative Philosophy (1868), reprinted in P. Weiner (ed), op.cit.

not mean the supersession of psychological phenomena by mechanistic formulations."¹ Veblen's "instincts," including the important "instinct of workmanship" are teleological, involving "consciousness and adaptation to an end aimed at," but the instincts merge by "insensible gradations" with the lower and less complex instinctive activities of the type found in animal behavior and below these, into the class of "unmistakable tropismatic sensibilities, without its being practical to determine by any secure test where the one category should be declared to end and the other begin."² The instincts are "spiritual traits, emerging from a certain concurrence of physiological unit characters Some such account of the instinctive dispositions and their relations to the physical individual seems necessary as a means of apprehending them and their work without assuming a sheer break between the physical and immaterial phenomena of life."³ All instinctive action is intelligent. The contrast between instinct and intelligence belongs to "an earlier theoretical position, according to which the functions of intelligence were referred to a distinct immaterial entity, entelechy, associated in symbiosis with the physical organism."⁴

1 The Instinct of Workmanship, p. 28. He refers to Loeb's Comparative Physiology of the Brain and Comparative Psychology.

2 ibid., p. 5

3 ibid., p. 13

4 ibid., p. 30

The biologically based psychology does not "conceive the organism as a causal hiatus." Human conduct is thought of "as the reaction of such an organism under stimulus," but the "later psychology" imputes "to the organism a habit of life and a self-directing selective attention in meeting the complex of forces that make up its environment." This "selective play . . . that constitutes the organism's habit of life under the impact of the forces of the environment counts as discretion."¹

Thus, in contrast to hedonism, "the characteristic feature of the newer conception is the recognition of a selectively self-directing life process in the agent. While hedonism seeks the causal determinant of conduct in the (probable) outcome of action, the later conception seeks this determinant in the complex of propensities that constitute man a functioning agent, . . . a personality."² When man is viewed in terms of process--as modern science views phenomena--there is a continuity to his conduct. As a functioning agent he does not passively respond to anticipated pleasures, he decides what shall be pleasurable. Men act purposefully, but purposive action is not a characteristic of an isolated individual. Action takes place within a "fabric of institutions," of "habitual modes of activity and relations."

Hedonist economics reduces "all phenomena to terms of a

¹ "Preconceptions of Economics," III, Place of Science in Modern Civilization, p. 156

² ibid.

'normal', or 'natural' scheme of life constructed on the basis of the hedonist calculus."¹ Veblen would class as hedonistic any analysis which takes the task of economic analysis to be the definition and classification of economic concepts in terms of a system of motivated individual action. He condemns hedonism because modern science is not concerned with "putative phenomena warily led out from a primordial metaphysical postulate, such as the 'hedonic principle'."² He would equate hedonism with methodological individualism, the doctrine that all explanation must be expressed in terms of propositions about the economizing individual mind. There is no "'solitary hunter' . . . and there is no man who 'makes by his own labor all the goods that he uses' . . ." It is a misrepresentation to speak of "'the economy of a man who works only for himself', and say that 'the inherent productive power of labor and capital is of vital concern to him' because this overlooks the main facts in the case in order to put the emphasis on a feature which is of negligible importance."³

While it is true that men act rationally, the "element of discriminating forethought . . . distinguish^{es} human conduct from brute behavior,"⁴ still "an adequate theory of economic

1 "Professor Clark's Economics," op.cit., p. 182

2 "Fisher's Capital and Income," Essays in Our Changing Order, p. 150

3 "Professor Clark's Economics," op.cit., p. 184

4 "The Limitations of Marginal Utility," op.cit., p. 239

conduct, . . . cannot be drawn in terms of the individual simply--as is the case in the marginal utility economics--because it cannot be drawn in terms of the underlying traits of human nature simply; since the response that goes to make up human conduct takes place under institutional norms and only under stimuli that have an institutional bearing . . ."¹

"The postulates of marginal utility, and the hedonist postulates generally, fail at this point in that they confine the attention to such bearings of economic conduct as are conceived not to be conditioned by habitual standards and ideals and have no effect in the way of habituation."²

Veblen took note of the efforts of his contemporaries to repudiate the hedonist foundations of economic theory by changing the name of the measurable magnitude which the economic man seeks to maximize from "pleasure" to some more neutral term. ". . . in the apprehension of later speculators Bentham's 'pleasure and pain' has seemed too bold and materialistic, and they have had recourse to such less precise and definable terms as 'gratification', 'satisfactions', 'sacrifice', 'utility', and 'disutility', 'psychic income', etc. but hitherto without any conclusive revision of the terminology. These differences and innovations do not touch the substance of the ancient postulate."³ So he did not hesitate to describe

1 ibid., p. 242

2 ibid., p. 243

3 The Instinct of Workmanship, ftn., p. 46

Irving Fisher's theories of income and capital as hedonistic, in spite of Fisher's protests that his economic or actuarial man did not calculate in terms of pleasure and pain, but of "psychic income," into the psychological nature of which the economist as scientist did not inquire. Indeed, Fisher considered himself a leading opponent of the hedonist psychology.¹

* * * * *

Now let us consider the very different range of questions Knight has in mind when he attacks hedonism as the psychological foundation of economic theory. In his early writings, he assured his readers that utility theory was not logically bound to a hedonist psychology. His reasoning though not his terminology was similar to Fisher's. "Economists generally have been coming to recognize that the psychology of the subject is properly behavioristic; that an economist need not be a hedonist (Jevons and Edgeworth notwithstanding) and that he need not even consider the issue between rival psychologies of choice."² But by a behavioristic treatment, as we have seen, Knight means "phenomenal description" of coexistences and sequences, "making no hypotheses." In order to be eligible for behavioristic treatment, in Knight's sense, a subject matter must exhibit no procedural activity. Therefore the resulting theory is a thoroughgoing mechanical explanation of conduct.

¹ See the reviews of Fisher's Capital and Income and The Rate of Interest, reprinted in Essays in Our Changing Order; and the reply to Veblen's criticisms by Fisher, "Capital and Interest," Political Science Quarterly, Sept., 1909.

² Risk, Uncertainty and Profit, ftn., p. 64

The body is a "causal hiatus" with motives as forces eventuating in conduct. Knight is, like Veblen, concerned with the active character of thought, but his way of allowing for it is not through a humanizing of science so that it becomes consistent with the "active idea." It is to make science even more austerely antithetical to human values and purposes, but then restrict its scope in order to leave ample space for the idea to be active, the will to be free. Knight's "behavioristic" psychology would be unhesitatingly rated hedonistic by Veblen, and it is unclear why Knight himself does not candidly acknowledge it as hedonistic.

Wicksteed regarded the signal achievement of his purification of economics the once-for-all elimination of the proverbial economic man.¹ But Knight defends this conception as "indispensable" to economic analysis. "Some such device is imperatively required." The economic man is the "scientific man . . . who does what he wants to do and whose wants are consistently related to the situation in which the man is placed . . . this really means . . . simply the mechanistic view of man as an automaton, one whose conduct is in accordance with law in the scientific sense . . ." ² He even says that for Crusoe, the economic man, the ends of action "would be biological, or possibly psychological in the phenomenal sense of experience intrinsically desired."³ It is this bio-

¹ "The Scope and Method of Political Economy," American Economic Association, Readings in Price Theory, p. 11

² "Economic Psychology," op.cit., ftn., p. 86

³ "Science, Philosophy and Social Procedure," op.cit., p. 207

logical or phenomenal reductivism--the conversion of ends into non-problematic factual data--which Knight finds most objectionable in hedonism, when proposed as a general theory of conduct.

Thus, though Knight urges the necessity for the economist's utility concept to be "completely divorced from hedonism,"¹ he is most reasonably interpreted as a defender of hedonist psychology for the narrow purposes of a "science" of human conduct. What he actually wishes to repudiate is not psychological hedonism but the utilitarian morality, "a scientific ethics is a contradiction in terms."²

His position is virtually the opposite of that of John Stuart Mill. Later commentators have noted that the younger Mill in effect--though not in formal statement--abandoned the hedonistic psychology of his father and Bentham when he made his distinction between pleasures of different qualities.³ "It is better to be a human being dissatisfied, than a pig satisfied; better to be Socrates dissatisfied, than a fool satisfied."⁴ Though utilitarianism and hedonism are historically associated in the writings of Bentham, Mill's example indicates that they are logically separable. The most reason-

¹ Risk, Uncertainty and Profit, preface p. xlvi

² "Economic Psychology," op.cit., ftn., p. 85

³ John Dewey, Theory of the Moral Life, Ch. II, Sec. 3, Veblen, "Preconceptions of Economics," II, The Place of Science in Modern Civilization, p. 152

⁴ Utilitarianism, Ch. 2, reprinted in Marshall Cohen (ed) The Philosophy of John Stuart Mill (1961), p. 333

able interpretation of the younger Mill makes him a utilitarian but not a hedonist. On the other hand, Knight is most accurately described as a hedonist in economic theory who is not a utilitarian. Knight offers a rigorously, consistently hedonist interpretation of economic behavior, but stresses the status of the economic man as an abstraction, a scientific postulate to be set aside when one comes to the discussion of moral questions.

In fact, Knight's economic man maximizes a cardinally measurable quantity, usually called utility, sometimes "desiredness,"¹ which is admirably adapted to the specifications of the Benthamite calculus. In the course of his career he has shifted from an ordinalist to a cardinalist position. It will provide a useful insightⁱⁿ to the relationship between Knight's utility concept and traditional hedonism of the Benthamite variety if we follow him in this movement.

In the early writings, Knight did not make use of the indifference curve analysis which has become common in recent decades, but he did attempt to indicate the ordinal or relative character of his utility concept by omitting the horizontal axis from his utility diagrams, so the reader would attach no significance to the height but only the slope of the curve.² Commenting on Davenport's treatment of utility as an absolute magnitude, he said, "The present writer finds

¹ "Methodology in Economics" I, Southern Economic Journal (1961), p. 188

² See, e.g., Risk, Uncertainty and Profit, p. 68

it impossible to conceive such an entity."¹

Yet in recent years he has come around to cardinal utility.² He concedes that in his early work he dealt "disaparagingly with the utility principle," even referring to it as "'pernicious' doctrine."³ Yet "critical discussion of the new literature attacking the theory has convinced me that utility theory is something like the traditional form . . . is sound and necessary for general economic analysis."⁴

Knight's proposed revival of cardinal utility is related to his disapproval of the "income effect" introduced by J. R. Hicks and R. D. G. Allen in their presentation of the indifference curve approach to consumer demand.⁵

Alfred Marshall based the theory of consumer demand on the law of diminishing marginal utility. Utility is treated as cardinally measurable. Marshall assumed that the marginal utility of money is constant, which implies a constancy of the ratio of the price of a good to its marginal utility; that

1 ibid., p. 65

2 See especially "Realism and Relevance in the Theory of Demand," Journal of Political Economy (1944)

3 Risk, Uncertainty and Profit, preface, p. xlvi

4 ibid.

5 "A Reconsideration of The Theory of Value," Economica, Feb-May 1934, J. R. Hicks, Value and Capital (2nd Ed., 1946), Part I

is, its invariance with respect to the buyer's purchasing power.¹ If the quantity of a good increases, its marginal utility will fall, and the price must also fall. The assumption of a constant marginal utility of money, however, entails that an individual's demand for a good is independent of his income. Now an important advantage claimed for the indifference curve approach to consumer demand is that it does away with the necessity for this Marshallian assumption, and permits the analysis of price changes into income as well as substitution effects. It also makes possible the construction of income-consumption curves, showing the change in demand for a product at constant prices but changing incomes.²

Knight claims that, in drawing up a demand curve for a product, it is inappropriate to have both income and the prices of other goods varying at once. One must, on a two dimensional diagram, plotting the demand for a good against a schedule of prices, either hold the prices of other goods constant or hold real income constant. Knight believes that the correct alternative to choose is the constancy of income. He therefore proposes returning to the Marshallian analysis. He associates the intrusion of the "income effect" into demand

1 This assumption eliminates the effect on the equilibrium price in a market of purchases and sales at non-equilibrium prices during the higgling and haggling in the early stage of trading. See especially Marshall, Principles of Economics, App. F., pp. 791-3

2 Footnote on next page

2 The fall in the price of a commodity is represented on an indifference curve system by a change in the point of tangency between a straight line "price-consumption curve" and an "indifference curve," convex to the origin. The new point of tangency will be on a "higher" indifference curve, representing a higher degree of satisfaction. Hicks shows how the movement can be analyzed into a parallel component movement representing passage to a higher real income and a movement along the new indifference curve, representing the substitution of the now relatively cheaper good for the more expensive one. The first component movement is the "income effect," the latter is the "substitution effect." See Figure 8, p. 31, of Hick's Value and Capital, Ch. II.

theory with the intellectual atmosphere of the Keynesian Revolution of the thirties, with its advocacy of an integration of the theory of money with the theory of relative prices. "Contrary to the tendency in recent writing," Knight favors keeping the "income effect" out of demand theory and retaining "a sharp separation of the theory of money from that of relative prices."¹

He argues that "it is more unrealistic to hold that one only 'ranks' different combinations . . . without thinking of finite increments, i.e., of quantities in the cardinal and not merely the ordinal sense If all other things are equal, . . . it is unquestionable that the capacity for enjoying any one good is satiable, that with increased consumption it will fall to zero and then become negative That is, we do compare successive increments of the same kind . . . the ordinalist position is not really simpler, and . . . if one rigorously minimizes concepts he will come out at behaviorism, excluding all motivation and all economics . . . "²

He therefore bases his economics on a pre-social "economic man," equipped with a cardinal utility calculus, concerned solely with purely individual ends which are non-problematic factual data--biological or psychological "in the phenomenal sense"--and rendered homogeneous in units of utility or "desiredness." The conception is thoroughly mechanical and what

¹ Risk, Uncertainty and Profit, Preface, p. xlviii

² "Methodology in Economics," op.cit., p. 191

we have called "interactional," a point Knight not only concedes but insists upon.

In fact, the function of cardinal utility in preserving the rigid division between the theory of relative prices and the study of monetary problems, points up the hedonist character of Knight's economics, as Veblen understands hedonism.

The separation implies the doctrine of the neutrality of money. There is a parallel between this doctrine and a nominalist view of language. According to the nominalist, language is merely a convenience, a device for communicating thoughts that already exist in isolated minds, about particular objects and events that are independent of thought. Language and communication have a derivative, instrumental function.

Similarly, the doctrine of the neutrality of money assumes that the economic man, the "individualist individual," has an existence independent of, prior to, the institutions of the money economy, which are therefore mere reflections of a primordial rationality. Money is no more than a convenience, a device for computing exchange ratios that pre-exist their expression in monetary terms, so that "great as the difference would be between a country with money and a country wholly without it, it would be only of convenience."¹

The doctrine of the neutrality of money really epitomizes

¹ J. S. Mill, Principles of Political Economy, p. 6

Veblen's conception of a hedonist economics. "Pecuniary institutions induce pecuniary habits of thought which affect men's discrimination outside of pecuniary matters; but the hedonist interpretation alleges that such pecuniary habits of thought do not affect men's discrimination in pecuniary matters . . . It is admitted the preoccupation with commercial interests has 'commercialized' the rest of modern life, but the 'commercialization' of commerce is not admitted."¹ Hedonism here means nominalism and methodological individualism.

On the other hand, Knight's anti-hedonism is a concern that his nominalistic, interactional utility calculus not be used for a scientific ethics, a "glorified economics." There are two steps in his emasculation of the calculus for this purpose. Like much of Knight's argument, they require one to take off simultaneously in opposite directions.

The first step involves pushing the individualism of his economic psychology to an ultimate conclusion. Each individual's utility calculus is unique to him, expressed in his own value scale. "It is of the essence of the doctrine of equalization as a social principle that no comparison is made between the utilities of different individuals."² Market equilibrium requires only that relative utilities of all dollar's worths of different commodities be equal for each consumer,

¹ "Limitations of Marginal Utility," op.cit., p. 247

² "Notes on Utility and Cost," The Economic Organization, p.131

rich or poor. Because of the uniqueness of the individual's subjective experience, it is impossible to make calculations of satisfaction or of pleasure and pain if more than one person is affected by a proposed change. It "lands one in solipsism" to attempt to ground ethics on "hedonism or any purely individual conception of motive or interest."¹

The second step involves moving in a direction opposite from individualism, and stressing the social element in the determination of wants. To show that wants or ends are "social" and not biological or "factual" as they are for the economic man is to demonstrate that they cannot be made into data for a calculus of utility. So we have Knight's numerous discussions of the social determination of the ends of action.²

In order to allow for moral man, one must take account of his existence as a "social being" participating in social procedure, but to do this we must turn away from a scientific treatment of conduct. Any purely individualistic theory like hedonism has the effect of reducing "to nonsense any conception of intelligent group decision in beliefs and action, because they make discussion or meaningful utterance unreal."³

If we agree to designate as hedonist a psychology that

¹ "Ethics and Economic Reform," Freedom and Reform, p. 77

² George J. Stigler's essay, "The Cost of Subsistence," Journal of Farm Economics, May, 1945, argues that annual adult nutritional requirements could be met with a trifling money outlay. This is meant to dramatize the Knightian contention of a large social, "immaterial," element in wants.

³ "Ethics and Economic Reform," op.cit., p. 77

treats "motives as forces" impelling a passive actor, that regards motives as present desires for future anticipated ends which can be quantified in homogeneous units, that restricts rational action to acts of calculation, then, on this criterion, Knight's economics of "the hedonist man, the selfish man, and the 'rational' man," alternative meanings of "the scientific man,"¹ is authentically hedonist. His desire to call it something else is perhaps in deference to prevailing opinion among psychologists and epistemologists. But it is confusing so far as classificatory accuracy is concerned.

* * * * *

We can draw a final contrast between the interactional and the transactional points of view by considering Knight's denial of the possibility of interpersonal comparison of states of happiness or satisfaction. Happiness is held to be a feeling, so unique its measurement requires a special hedonimeter for each individual. "How do I know that it hurts you more to have your leg cut off than it hurts me to be pricked by a pin?"² But from the transactional point of view, happiness is not a private feeling, but a quality of observable performances. There is no reason why we cannot make statements of the type, "Jones is happier than Smith," and propose tests all reasonable men would agree would validate them. This is

¹ ibid., p. 86

² This question is attributed by Joan Robinson to Gottfried Haberler. Economic Philosophy, p. 139

another way of saying that we have no privileged access to the workings of our own mind, but learn about ourselves and others through observation and communication.

We shall next examine Knight's contributions to the theory of income distribution. As we shall see, both his theories of profit and interest are closely related to his more fundamental ideas about the nature of social science and its method.

FOURENTERPRISE AND CAPITAL(1) The Economic Application of J.S. Mill's Method of Difference

Knight's principal concern as an economic theorist has been the delineation of the active, creative element in economic life. Given the fundamental position of the process-procedure dichotomy in his social philosophy, it is natural that the method he has chosen take the form of working out a series of dualisms which reflect the basic dichotomy. Interest in the dynamic factors behind economic development leads Knight as economic theorist to the construction of a rigorously static economics, so that these dynamic factors are thrown into relief by way of contrast.

He develops the general approach to distribution theory originally presented in John Bates Clark's The Distribution of Wealth (1899). Another variant of the Clarkian approach had been worked out by Joseph A. Schumpeter in The Theory of Economic Development (originally published 1911). All three of these theorists account for the entrepreneurial function and its reward, profit, through analysis of a situation in which there would be no scope for entrepreneurial activity. This imagined situation is the "natural" or "normal" static state, or the stationary

circular flow, in which the "given conditions" of demand and supply have worked out the full consequences of present tendencies. The "primary attribute of competition . . . is the 'tendency' to eliminate profit and loss, and bring the value of economic goods to equality with their cost . . . Hence the problem of profit is one way of looking at the problem of the contrast between perfect competition and actual competition."¹

The analysis is an example of J. S. Mill's method of difference. One examines two situations. In the first, the factor Y, to be explained, is absent. In the second, it is present. The two situations differ only in that the factor or element A is present in the second situation, but not the first. Then A is the "cause" of Y.² The application of the method of difference to social and economic problems has been most fully analyzed by Max Weber in his discussions of the "ideal type." This, he wrote, "is an analytical construct. In its conceptual purity, this mental construct cannot be found anywhere in reality . . . It has the significance of a purely limiting concept with which the real situation is compared and surveyed for the explication of certain of its significant components."³

1 Risk, Uncertainty and Profit. p. 19

2 Mill's three methods, the method of agreement, the method of difference, and the joint method of agreement and difference, are discussed in System of Logic (1st Ed., 1843), Book III, Ch. VIII.

3 "'Objectivity' in Social Science," Shills and Finch (ed), Max Weber on the Methodology of the Social Sciences (1949)

In line with this, Schumpeter speaks of a stationary circular flow as a "methodological fiction When we try to visualize how such a process might look and which of the phenomena of reality might be present in it, we ipso facto discover which of them are lacking. And we thus acquire a tool of analysis that helps us locate the sources of the latter "

J. B. Clark, Schumpeter and Knight agree in finding the entrepreneur and his profit inconsistent with the conditions of an equilibrated system of perfect competition. The differences in their explanations relate to differences in their views about the assumptions necessary for defining a condition of perfect equilibrium of perfect competition.

Clark listed five "generic changes" which are constantly going on: population increasing, capital increasing, methods of production improving, forms of industrial establishments changing, and consumer wants multiplying.² These are the dynamic factors.

We must in imagination, sweep remorselessly from the field the whole set of influences we have called dynamic In the concluding part of our study we are to restore the dynamic forces that our earlier hypothesis removed and to note the special effects of their action. For the first time, we shall thus be able to understand and to measure these forces; for their effects will stand by themselves Whenever

1 History of Economic Analysis, p. 964

2 The Distribution of Wealth, p. 56

a theoretical world has been created, in which natural values, wages and interest prevail, that which has been banished is social economic dynamics . . . If we put it out of sight, with no intention of restoring it, we get a result that is unreal, because it is seriously incomplete; but if we first remove the dynamic movement and then restore it, we create a science that fully interprets economic life. ¹

Schumpeter attempts to show that it is only the third and fourth of Clark's five dynamic causes which must be assumed away in order to maintain an equilibrated economic system. ² These are the changes in production methods and forms of industrial organization. It is the innovating entrepreneur who is responsible for these changes, and in his absence, Schumpeter argues, the other factors mentioned by Clark would not be disequilibrating. Schumpeter therefore works out his analysis as a contrast between habitual, adaptive behavior consistent with the maintenance of a profitless, equilibrated economic process, and the originative, innovating activity of the entrepreneur which throws the system into disequilibrium.

Knight adapts the Clarkian ideal type analysis to his process-procedure dichotomy. We have seen in the previous chapter how Knight brings procedural activity within the scope of "behavioristic" science. He abstracts from all "liability-to-err" and so turns procedure into process. An economic system in which there is no uncertainty is one in which all activity takes the form of process and so can be

1 ibid., pp. 71-3

2 Theory of Economic Development, ftn., pp. 59-60 & 128

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treated "behavioristically." Knight has the rational ideal type comprise the elements of the economic system that take the form of process. Then the residual category includes those active, problem solving elements which are procedure. The model of perfect competition is the social science analogue of Newtonian mechanics. The entrepreneur and his profit, along with freedom of the will, are fitted into the gaps left by a scientific ("behavioristic") explanation of conduct.

(2) The Uncertainty Theory of Profit

Knight believes that the principal obstacle to a correct emphasis in distribution theory has been the lingering influence of the classical (Ricardian) theory of distribution as the sharing of the national product among broad classes of resource owners or factors of production. The classics did not, according to Knight, approach distribution as a problem in valuation or pricing. They saw it as an affair of dividing a pie between social classes. He quotes Ricardo: ". . . the great questions of Rent, Wages and Profit must be explained by the proportions in which the whole produce is divided between landlord, capitalists and laborers, and which are not essentially connected with the doctrine of value."¹

The subjective value revolution of the later nineteenth century made possible the presentation of the theory of distribution as a theory of the pricing of productive services, and "a sound distribution theory is hardly more than a corollary or footnote to an exposition of the mechanism by which resources are apportioned among different uses, and organized in each use, under the force of price competition."²

1 "The Ricardian Theory of Production and Distribution" (1935), reprinted History and Method, p. 41. The quotation comes from J. H. Hollander (ed), Letters of Ricardo to McCulloch (1895), letter XV, p. 72

2 ibid., p. 61

As a consequence of working out these implications of the subjective value revolution, attention is shifted from the classical tripartite division of income among classes to an analysis which places the entrepreneur, the planner and administrator, at the center of economic organization. The theories of enterprise and capital act jointly to effect this transfer of attention. The profit theory sets the active entrepreneur apart from the passive resource suppliers; the interest theory aims to establish that no relevant economic distinction can be drawn among the passive income recipients, the suppliers of capital goods, land or labor.

* * * * *

An early attempt by an American economist to do justice to the entrepreneur was that of General Francis A. Walker.¹ However, he remained within the Ricardian tradition in that he saw distribution as a separation of surpluses from cost payments. His procedure was to turn Ricardo around. Interest was determined by demand and supply. Profits were treated as differential rents paid to rare entrepreneurial ability, analogous to the Ricardian return to intra-marginal land. Then he determined wages as a residual. Ricardo's rent theory led to the unpleasant conclusion that a disproportionate share of the fruits of economic progress would

1 The Wages Question (1876)

fall to the landowning class. Walker's residual claimant theory of wages led to the conclusion that the fruits of progress accrue to the laborer. If interest, rent and profit are fixed, and the product increases, the increase all belongs to labor.

Though Knight appreciated Walker's emphasis on the entrepreneur, he felt that Walker's rent theory of profit "need not detain us."¹ Walker's type of analysis had been replaced by the marginal productivity theory. Clark and Wicksteed showed that the share of land, labor and capital could, under static conditions, be regarded either as marginal product or a residual. There was no need for a special theory to account for each share. All were coordinate, the shares mutually determined in equilibrium, "with that point once made clear the rent theory is reduced to a wage theory merely, and its special significance disappears."²

Knight's own theory of profit is introduced through criticism of Clark. As we have seen, Clark held that the natural or normal prices of classical theory were static prices. When natural prices prevailed, prices were equal to costs of production and there were no profits. But the static adjustment can occur only in the absence of dynamic

1 Risk, Uncertainty and Profit, p. 31

2 ibid.

change. In reality, dynamic changes are constantly taking place, and the process of adjustment is never completed. An invention creates a profit for some entrepreneur. But it is an elusive return which he cannot keep under competitive conditions. The fruits of technological progress are diffused throughout the system. In addition, there is friction, which keeps wages lagging behind their true static marginal productivity, and so sustains profit.¹

Knight criticizes Clark's analysis because it fails to distinguish between dynamic changes that can be foreseen, and those that cannot. If changes are predictable, then there need be no discrepancy between prices and costs. "The effect of any change which can be foreseen will be adequately discounted in advance, any 'costs' connected with it will be affected in exactly the same way as the corresponding 'values' and no separation between the two will take place." (p. 36) Knight therefore argues "that a society might be ever so dynamic, as Professor Clark defines the term, and yet have all its prices 'natural' or constantly equal to production costs, excluding any chance for the entrepreneur to earn a net profit. It is fallacious to define 'natural' conditions as 'static' conditions." (ibid.)

¹ See Chapter XXV, The Distribution of Wealth

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Therefore, it is not dynamic change as such, but the uncertainty which is associated with it which causes profit. Or, dynamic change is held to be a necessary but not a sufficient condition for the existence of profit. "Dynamic changes give rise to a peculiar form of income only in so far as the changes and their consequences are unpredictable in character." (p. 37)

Clark, however, had specifically rejected the idea of risk-bearing as the function of the entrepreneur. Risk does give rise to a special type of income, but this belongs to the capitalist, not the entrepreneur. "It goes without saying that the hazard of business falls on the capitalist. The entrepreneur, as such, is empty-handed. No man can carry risk who has nothing to lose."¹ Knight professes to find in this treatment a confusion of profit with interest. "How he would treat this income, what relation it would bear to interest, he does not tell us." (p. 38)

The theorist who had correctly--from Knight's point of view--located the "cause" of profit was the Philadelphia² business man and economist, F. B. Hawley. He identified enterprise with risk-bearing, and called it the only "productive" factor. The traditional three factors of production, land, labor and capital, were relegated to the status of "means" of production. The theory had several distinctive

1 "Insurance and Profits," Quarterly Journal of Economics (1893), quoted by Knight, op.cit., p. 38

2 Enterprise and the Productive Process (1907)

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features. Hawley assumed that the enterpriser (as he called him) was able to make a correct calculation of the actuarial value of a risk--the enterpriser's calculations were "on average" correct--but that he still required a return for suffering the irksomeness of exposure to risk. So prices to the consumer must be sufficiently in excess of costs to furnish this required inducement.

Hawley regarded all decision-making as the function of management, or the coordinator. Since managers could be hired, this was not enterprise. The enterpriser was the one who took the responsibility for decisions, not the one who made them. It was as the owner of wealth that the enterpriser accepted the consequences of decisions and so ran the risks.

Knight's dissent from Hawley is due to Hawley's assumption that the enterpriser is able to calculate the actuarial value of the risks to which he is exposed. Knight argued that we must make a fundamental distinction between situations involving calculable risks, and situations in which there is no data for making such calculations. He proposes to describe the former as characterized by risk, the latter by uncertainty. It is Knight's view that if contingencies take the form of risks, so defined, they can be insured, or converted into certainties by some form of grouping. Then they would not preclude profitless imputation, as in the Clarkian static state. Only true uncertainty can account for discrepancies between prices and costs.

Knight's own theory is best regarded as the outcome of synthesizing the Clark and Hawley approaches. He calls the former the "dynamic" theory, the latter the "risk" theory. He makes use of Clark's ideal type construction, but uses it to give exposition to Hawley's type of profit theory. He describes his theory as providing for the truth in both theories, the dynamic theory of Clark and the risk theory of Hawley.

On the one hand, profit is in fact bound up in economic change (but because change is the condition of uncertainty), and on the other, it is clearly the result of risk, or what good usage calls such, but only of a unique kind of risk, which is not susceptible of measurement. The Clark school has confused change with a common but not universal or necessary implication of change, and both schools have followed everyday speech into the fallacy of treating risk as a substantially homogeneous category, where a fundamental difference in kinds of risk is in fact the key to the whole mystery. (p. 48)

We begin our critical evaluation of Knight's uncertainty theory of profit with a discussion of his definition of perfect competition, and then go on to consider the contrast between risk and uncertainty. We conclude with some questions that arise when enterprise is identified with uncertainty-bearing.

(a) perfect and imperfect competition

One of Knight's principal concerns as an economic theorist has been the development of a rigorous definition of perfect competition. In spite of the importance to economic analysis of the idea of perfect competition, he believed that "much remains to be done to establish a systematic and coherent view of what is necessary to perfect competition, just how far and in what ways its conditions deviate from those of real life and what 'corrections' have accordingly to be made in applying its conclusions to actual situations."¹

A list of assumptions held to be implied by perfect competition is presented and discussed in Risk, Uncertainty and Profit.² It^{is} assumed that the members of society act with complete rationality. "Their behavior is all 'conduct' . . . ; all their acts take place in response to . . . consistent motives . . . ; nothing is capricious or experimental . . . They are supposed to know absolutely the consequences of their acts . . . , and to perform them in the light of their consequences." (p. 77) In addition, it is assumed that the market participants "own themselves," that is, "each controls his own activities with a view to results which accrue to him individually." (ibid.) Each is "free from social wants, prejudices, preferences, or repulsion,

1 Risk, Uncertainty and Profit, p. 5

2 ibid., pp. 76-81; and Chapter VI

or any values which are not completely manifested in market dealing." This postulated individual independence, Knight says, "excludes all forms of collusion, all degrees of monopoly or tendency to monopoly." (p. 78) There is perfect mobility in all economic adjustments. "To realize this ideal all the elements entering into economic calculations--effort, commodities, etc.--must be continuously variable, divisible without limit." (p. 77) These assumptions are said to be "idealizations or purifications of tendencies which hold good more or less in reality." (p. 79) However, the crucial assumption is that of perfect knowledge. "So long as we adhere to the fundamental condition . . . that men know exactly what they are doing, that no uncertainty is present, other elements of reality hitherto abstracted merely complicate the process of adjustment without changing the character of the result." (p. 94)

Knight does not claim that the older economists actually assumed omniscience. Rather the contrary. The intent of the work is to bring out "not the assumptions definitely in the minds of the classical economists, but the assumptions necessary to define the conditions of perfect competition, at which classical thought was aimed . . ." (p. 18)¹

¹ Menger, Problems of Economics and Sociology (1883), Book I, Ch. 7, pp. 83-4, says economic theory is worked out on the assumption of self-interest and omniscience. Earlier Jevons had written (Theory of Political Economy, 1871): "A market, then, is theoretically perfect when all traders have perfect knowledge of the conditions of supply and demand."

The late Arthur Marget, on the other hand, is a student of economic thought who denies that economists of the orthodox tradition either implicitly or explicitly assumed perfect foresight in developing their theories. (Theory of Prices, II, p. 150). Also, Schumpeter protests charging Walras and Pareto with "the absurdity of assuming omniscience." (Business Cycles, I. p. 53)

In defining the situation of the individual firm under conditions of perfect competition, Knight does not make use of the concepts elasticity-of-demand and marginal revenue. These Marshallian ideas were elaborated during the twenties to provide a classificatory schema for types of competition.¹ It is, however, easy to translate his analysis into this conceptual framework. The general rule of profit maximization can be stated as equalize marginal revenue and marginal cost. Perfect competition is the special case in which the equality of the marginal quantities implies, in the long run, equality of the related average quantities. If price, or average revenue, is equal to average cost, then the product, measured in values, will be precisely exhausted in imputation. Each input will receive the value of its marginal product.²

1 Joan Robinson, Economics of Imperfect Competition, Chs. 2 & 3. In Risk, Uncertainty and Profit, Knight does not use the adjective "marginal" at all, claiming it is misleading. "We avoid the expression 'marginal' utility, because of its implication that there is a difference in the significance of different portions of the same supply." (ftn., p. 64)

2 The production function must be homogeneous of the first degree, and the demand curve must be a straight horizontal line, so that marginal revenue will equal price.

The exhaustion of product theorem can be proved by Euler's Theorem on homogeneous functions. This shows that, if a dependent variable is a linear and homogeneous function of several independent variables, then the sum of the partial derivatives, each multiplied by an independent variable, will equal the dependent variable.

But it is easy to translate this into the language of average and marginal quantities. The income payments of an integrated firm are its costs. If marginal cost equals average cost, then incremental cost payments will add up to total costs. If average cost equals price, then total cost equals total revenue. The firm's revenues will be exhausted in income payments. However, if average cost is falling or rising with output, marginal cost will be less or greater than average cost. Payments to resources at the rate set by their

(ftn., cont.)

Knight's assumptions imply that each individual firm is faced with an infinitely elastic demand curve. The demand curve is a straight line parallel to the horizontal axis. Marginal revenue is equal to price. Price will be equal to average cost if the unit cost curve is also a straight line. Then an increment in the value of product will be exhausted in distribution, and there will be no profit or loss. But Knight says this situation is inconsistent with the maintenance of perfect competition, though his assumptions, including perfect mobility and divisibility, seem to imply constant cost. "If the amounts of all elements in a combination were freely variable without limit and the product also continuously divisible, it is evident that one size of combination would be precisely similar in its workings to any other similarly composed. But under this condition the tendency to monopoly in the production of every good would be unimpeded." (p. 98) Therefore, we must postulate "that an establishment of relatively small size in proportion to the industry as a whole is more efficient than a larger one." (ibid.) This amounts to giving up the assumption of perfect divisibility. Each

2 (cont.)

marginal contribution will exceed or fall short of total revenue, so leaving a profit or loss. If cost is not constant (the production function not linear and homogeneous), then the exhaustion of product theorem holds only for the minimum point on the average cost curve. It holds only for perfect equilibrium of perfect competition.

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firm must employ at least one indivisible "fixed" input. Its cost curve will then turn up, under Knight's postulate, at a small scale of output, and competition will tend to keep it producing at its most efficient size, that is, at the minimum point on its average cost curve. For small deviations, both the average cost and the demand curve can be taken as horizontal lines, equidistant from the horizontal axis. Under these conditions, it will also be true that a proportionate change in all inputs will yield an equal proportionate change in the value of the product. Each agent can demand and receive the value of its marginal product. But now profitless imputation is a property only of perfect equilibrium of perfect competition.

However, contrary to Knight, his one-time student, George J. Stigler, argues that the assumption of constant costs is the appropriate one for perfect competition and omniscience. Stigler says that the argument that a firm operating under such conditions will expand until it becomes a significant source of supply (and is no longer a perfect competitor) "is clearly based on assumptions incompatible with perfect competition. With perfect knowledge and economic rationality, it is difficult to see why firms should expand their outputs; there would not be even a temporary gain from increasing their control of supply. No individual firm . . . could ever increase prices or decrease costs. A combination could increase prices temporarily, but unless entry into the industry could be controlled, there would be no permanent gain."¹

1 Production and Distribution Theories, p. 383

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Stigler's contention illustrates the difficulty involved in working out the implications of so sweeping an assumption as that of omniscience. Exactly what does it imply? Is it consistent with Knight's analysis of "speculative demand"¹? Speculation presupposes differences in opinion about future prices. Could omniscient beings have such differences? The price system is essentially a method of communication between producers and consumers.² Would there be a need for communicating changed tastes or conditions of production to market participants with perfect knowledge?

Indeed, Knight often draws attention to the contradictions to which the postulate of omniscience leads. It would be logically impossible for two individuals to have perfect knowledge of each other's actions and to act on such knowledge.³ The postulate therefore seems most inappropriate for isolating significant aspects of actual conduct.

J. B. Clark is held to have fallen into fundamental error in attributing disequilibrium and profit to dynamic change. (p. 35) Knight says that an economy might be ever so dynamic in Clark's sense, and still have no profit, if the changes were foreseen. Yet the model of an economy expanding under conditions of omniscience is a difficult con-

¹ "Statics and Dynamics" (1930), reprinted Ethics of Competition, pp. 170-1

² Schumpeter, Theory of Economic Development, pp. 5-7

³ See, e.g., "What Is Truth?" in History and Method, ftn., p. 167

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ception. With prices falling in terms of wages, the pattern of price expectations which would equate present demand and supply would be extremely complicated. As capital accumulates, interest rates fall. The capitalization formulas for durable equipment become forbidding mathematical constructions. The items in a firm's capital equipment would have different yields according to their length of life. Even if one is prepared to accept instantaneous mathematical insight as a by-product of omniscience, the assumption of perfect knowledge in a growth model can hardly be presented as a simplifying assumption.

Knight's argument that progress may be predictable-- which it is--seems to overlook the fact that predictability in the large does not rule out uncertainty in detailed relationships. The predictability of the course of scientific development may create uncertainty about the possibility of a particular invention. Changes in the level of aggregate business activity may be confidently forecast, and on that account, create uncertainty about the fortunes of a particular business firm. If scientific prediction is distinguished from fatalistic predetermination, as it must be, it is inevitably associated with uncertainty.¹ Uncertainty does not characterize one's expectations when he faces an

¹ "A theory which should be capable of being absolutely demonstrated in its entirety by future events would be . . . but a mere piece of fortune telling." Charles S. Peirce, "The Essentials of Pragmatism," J. Buchler (ed) Philosophical Writings of Peirce, p. 268.

absolutely unpredictable future. Then he does not even bother to wonder. One feels uncertain when there are unknown elements in a largely predictable course of events.

The ambiguities involved in the association of perfect competition with perfect knowledge are further indicated in the discussion of devices for eliminating uncertainty by making competition more, rather than less, imperfect. This is the case with grouping decisions, actually a way of effecting concentration of economic power. "The possibility of . . . reducing uncertainty by transforming it into a measurable risk through grouping constitutes a strong incentive to extend the scale of operations of a business establishment." Knight even says that "this fact must constitute one of the important causes of the phenomenal growth in . . . size of industrial establishments . . . uncertainty is eliminated and the desideratum of rational activity realized." (pp. 251-2)

Following this line of thought, it might seem that an economy operating under conditions of omniscience would be perfectly monopolistic rather than perfectly competitive. And Knight does indicate that this would be the case. He even says that perfect knowledge is inconsistent with perfect competition. Under static conditions, with the amounts

of all productive resources fixed and known to all, there would be nothing to prevent the establishment of collusive agreements placing each kind of resource under one bargaining agent. In the actual "rapidly changing conditions of the world, most agencies . . . have been rapidly and irregularly increasing in supply . . . [and] the technique of large scale organization requisite to secure unified control has been crude and imperfect." (pp. 189-90) But "'friction' (human limitations)" is required to keep society from the fate predicted by Marxists, "monopoly universal, or at least prevalent to an extent involving the complete breakdown of the competitive system of organization." (p. 190) So, "there does seem to be a certain Hegelian self-contradiction in the idea of theoretically perfect competition . . . " (p. 193) "Perfect foresight is theoretically as well as practically impossible, unless all the parties plan collusively in advance all details of their procedure and adhere to the agreed plan. The resulting situation would be the anti-thesis of individualism--the ultimate communistic anarchistic collectivism, as impossible as a perfectly competitive system."

1 "The Business Cycle, Interest and Money," (1941), reprinted History and Method, p. 208

What Knight's analysis seems to indicate is that the appropriate assumption for perfect competition is not perfect knowledge, but something more like an equal ignorance on the parts of the marketers.¹

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The usual statement of Knight's theory--that without uncertainty there would be no profit, so uncertainty is the "cause" of profit--compels consideration of the logical status of explanations that impute causal significance to broad, pervasive qualities of existence such as uncertainty about the future. Knight says that with uncertainty absent, "it is doubtful intelligence itself would exist . . . " (p. 268) How can we put forward uncertainty as the cause of a particular institution if it is the condition of humanity? When Knight says that "enterprise and the wage system of industry" is "a direct result of the fact of uncertainty" (p. 271), is he making a meaningful (i.e., refutable) statement about empirical reality?

1 Stigler, "Perfect Competition, Historically Contemplated," in Essays in the History of Economics (1965), pp. 234 & ff., attributes the "complete formulation" of the modern concept of perfect competition to Knight (p. 256). But he offers a considerable modification of the Knightian interpretation. He defines a "perfect market" as one with perfect knowledge, but notes that this does not imply perfect competition. "Indeed, in realistic cases a perfect market may be more likely to exist under monopoly, since complete knowledge is easier to achieve under monopoly." (p. 262) Stigler lists three conditions in addition to perfect knowledge: (1) absence of monopoly power in each industry, (2) freedom of entry and exist, (3) infinite divisibility of resources. But the analysis raises questions about whether these are logically consistent with with the postulate of omniscience; or, if it can be established that they are, whether the same argument would not show the postulate to be redundant, as already implied by Stigler's other conditions. In any event, the postulate closes inquiry about important questions as to the extent of actual knowledge possessed or attainable by the market participants.

The difficulty is one that is shared with all uses of the model of perfect competition as a Weberian rational ideal type. One of Weber's rules for ideal type analysis is that the course of action described by the ideal type be "objectively possible." The reason for this can be seen by referring to his example of an ideal type analysis of the conduct by opposing generals of a military campaign. ". . . in attempting to explain the campaign . . . it is indispensable . . . to attempt to construct imaginatively how each, given fully adequate knowledge both of his own situation and that of his opponent, would have acted. Then it is possible to compare with this the actual course of action and to arrive at a causal explanation of the observed deviations, which will be attributed to such factors as misinformation, strategical errors, logical fallacies, personal temperament, or considerations outside the realm of strategy." If instead of adequate knowledge, one were to attribute perfect knowledge to the military strategists, then all their conduct would fall into the residual category as "deviations." The only causal analysis that could be offered would be an uninformative statement to the effect that the campaigners were less than omniscient.

An objection of this kind applies to the ideal type status of the model of a perfectly equilibrated economic

1 Theory of Social and Economic Organization, p. 111

system. It is not obvious that such a state of affairs is "objectively possible." In fact, Knight says that it is not.¹ Then the factor that is held to distinguish the actual course of events from the ideal type is some broadly conceived trait of all existence rather than a clearly defined element that can be identified as the causal factor. The residual category is associated with dynamic change, innovation, uncertainty. At best, the analysis locates a broad "force" behind historical change which is another name for that which it purports to explain.

In fact, the most reasonable interpretation of Knight's theory--as our subsequent discussion will make clearer--is not that uncertainty is the "cause" of profit. Primitive and ancient societies had their full share of uncertainty but still no enterprise system and no profits. Knight's theory is that the institutions of the enterprise system allow the specialization of the burden of uncertainty-bearing, so that it becomes possible to shift this burden to those who voluntarily accept it. The "proof" of this proposition--if such exists--does not consist in establishing--what Knight's analysis fails to establish--that under omniscience there would be no profit. The argument must

1 "The Business Cycle, Interest and Money," op.cit., p. 208

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take the form of showing the procedures involved in shifting the burden of uncertainty-bearing. After we discuss the distinction between Knight's two kinds of uncertainty, we shall consider the possibility of providing such an analysis.

(b) the two kinds of uncertainty

Perhaps Knight's most original contribution to economic theory is his distinction between a risk, a contingency for which it is possible to compute the actuarial chance of a gain or loss, and a true uncertainty, a state of affairs that exists when there is no basis for the calculation of numerical estimates of probability.¹ It is "true" uncertainty which is the condition for the existence of profit.

It will be recalled that Knight believes that science aims at, and in principle provides, perfect knowledge of empirical fact. A rigorously scientific analysis can be applied only to subject matter capable of yielding such knowledge. Only if the actor has certain knowledge of the means and conditions of action can his activity be regarded as rational in the sense of instrumental rationality, though Knight stresses that in the limit of perfect rationality conduct loses its character as activity and becomes pure mechanism. Knight's risk extends the concept of perfect knowledge to include situations in which the individual event is unpredictable, but the proportion of events in a class of a certain kind is known. Whether a particular wine bottle

¹ Even Schumpeter, in spite of a general disapproval of explanations that rely on uncertainty, acclaimed Knight's "very useful emphasis on the difference between insurable risks and non-insurable uncertainty." (History of Economic Analysis, p. 894)

will burst is indeterminate, but not the proportion of bursting bottles out of all the bottles in the cellar. The loss due to bursting bottles can be calculated and added to the cost of the wine. Competition will assure that the price is just sufficient to cover it. " . . . an uncertainty which can be any method be reduced to an objective, quantitatively determinate probability can be reduced to complete certainty by grouping cases . . . measurable uncertainties do not introduce into business any uncertainty whatever." (pp. 231-2)

However, examination of Knight's argument will reveal that the only kind of measurable probability which actually eliminates all profit and loss is a priori probability. A priori probability rules are exemplified by the relative frequencies of various outcomes in games of chance. One is able to determine exhaustively the alternative possibilities from an examination of an object such as a die or a coin. The probability of a head when tossing a coin is $\frac{1}{2}$, since the coin has two sides, and only one can face up. He describes the classes of events in these cases as "absolutely homogeneous . . . except for really indeterminate factors." He says: "This judgment of probability is on the same logical plane as the propositions of mathematics (which also may be viewed, and are viewed by the writer, as 'ultimately' inductions from experience)." (pp. 224-5)

We have pointed out (Chapter Three) how, for Knight, mathematical propositions provide the norm for empirical knowledge. In his doctrine of risk, he extends the scope of perfect knowledge to include a priori probability. The argument is that, if all our knowledge were perfect in this sense there would be no occasion for deliberation and judgment. Future events would be perfectly predictable, either in detail, or as belonging to classes of events wherein the proportion of outcomes of a particular kind is known. There would be no future contingencies. All human behavior would become a matter of mechanical process.

An interesting inconsistency in his thought occurs when Knight allows himself, in considering the probability calculus, to reflect on the possibility that it may be reconciled with "freedom of the will." "If there is real indeterminateness [of the individual event] and if the ultimate seat of it is in the activities of the human . . . machine, there is in a sense an opening of the door to a conception of freedom in conduct. And when we consider the mystery of the role of consciousness in behavior and repugnance which is felt by common sense to the epiphenomenal theory, we feel justified in further contending for at least the possibility that 'mind' may in some inscrutable way originate action." (p. 221) But this is exactly what his theory does not require. If free will--involving decision making and choice--is compatible

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with a priori probability, then his doctrine that profit would be eliminated if uncertainty took the form of risks would cease to hold.¹

However, Knight does not think that a priori probability calculations have much applicability to business forecasts and decisions. Most judgments of relative frequency are based on statistical evidence, and this can give "but a probability as to what a true probability is." (p. 231) Statistical probabilities are not separated by any clear-cut dividing line from "estimates," where "there is no valid basis of any kind for classifying instances." (p. 225) "We hardly find in practice really homogeneous classifications (in the sense in which mathematical probability implies, as in the case of successive throws of a perfect die) and at the other extreme it is hard to find cases which do not admit of some possibility of assimilation into groups and hence of measurement." (pp. 246-7) In practice, the ability to eliminate profit by turning uncertainties into risks has a limited scope.

* * * * *

The theory of knowledge on which Knight's doctrine of risk and uncertainty is based is described by him as "functional and pragmatic," (ftn., p. 200) but the account he

¹ In the last preface to Risk, Uncertainty and Profit (1956), he says: ". . . contingency seems to be a prerequisite, but freedom involves a mysterious something more, an act, in a unique sense, of 'will'." (p. lx)

offers of probability calculations can be most adequately characterized as thorough-going nominalism. A spectator mind is conceived as surrounded by a bewildering heterogeneity of "things" which it attempts to classify. The presupposition of knowledge is "that the world is made up of things which, under the same circumstances, always behave in the same way." (p. 204) The problem of knowledge is that of being able to fit the things into homogeneous classes. When the classes display the homogeneity of the sequences of a priori probability rules--the tosses of balanced coins, the rolls of perfect dice--then knowledge is perfect. The possibility of applying scientific method to a subject matter depends on the stability of the classes into which the material of observation can be placed.

Much of the argument against the possibility of treating economic and social problems scientifically is based on an alleged heterogeneity of social facts. "The dogma of the 'uniformity of nature' . . . covers the stability or permanence of things and the reality of classes." Yet ". . . in the field of human attributes and behavior, all these prerequisites, the stability of the data, their assimilability into classes, even their objectivity and especially the possibility of their objective measurement--will be found subject to sweeping limitations which set corresponding limits to the scientific treatment of the phenomena."¹

1 "Limitations of Scientific Method" (1924), reprinted in Ethics of Competition, p. 118.

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Let us consider Knight's distinction between risk and uncertainty from the point of view of an alternative interpretation of numerical probability.

The calculus of probability is a pure deductive system, which contains the rules for calculating complex probabilities from a knowledge of elementary ones. There are rules of addition and multiplication. For example, if the probability p of the successful outcome of an experiment is a/b , then the probability of x successful and $n - x$ unsuccessful outcomes in n trials is $\frac{n!}{x!(n-x)!} (a/b)^x (1-a/b)^{n-x}$. The rules that make up the calculus are analytic. They make no reference to existences, and can be refuted by no actual experience. Their logical status is that of purely mathematical propositions, which according to this view, are also without empirical content.

In order to calculate probabilities which refer to empirical subject matter, specific values must be assigned to the elementary probabilities. A familiar text book expedient is to interpret the calculus by relating it to games of chance, tossing coins, rolling dice, drawing from a well shuffled deck. The elementary probabilities are calculated a priori, by considering the physical properties of such objects as coins and dice. Actual coins and dice are not ideal, but are biased in various ways. Applied to these,

the a priori probabilities become statistical hypotheses, which may be rejected if in an actual sequence of trials, the observed frequency diverges sufficiently from the postulated frequency.

On this interpretation of probability, all statistical hypotheses acquire their empirical character from their relationship to observed frequencies. But no statistical hypothesis is simply the report (or "description") of an observed relative frequency. They are statements of propensities or tendencies that apply to future activities. Peirce referred to the probability that a die would fall in a certain way as its "would-be" and "to say that a die has a 'would-be' is to say that it has a property, quite analogous to any habit that a man might have." Just as a habit defines how a man can be expected to behave on certain occasions, but does not consist in those actions, "so to define a die's 'would-be', it is necessary to say how it would lead the die to behave on an occasion that would bring out the consequences of the 'would-be'; and this statement will not of itself imply that the 'would-be' of the die consists in such behavior."¹

If we regard probability statements as "would-be's" applicable to future activity, then we cannot accept Knight's interpretation of the distinction between a priori and statistical probability--the former providing perfect

1 "On the Doctrine of Chances," Buchler (ed) op.cit., p. 169

knowledge of a probability, the latter giving only lower grade knowledge, "the probability of the value of the true probability." Rather the distinction is between analytic propositions, which cannot be refuted by experience because they make no reference to it, and empirical propositions, which derive their empirical status from the fact that there are conditions which would lead to their rejection. All relative frequencies that function as statistical hypotheses are theoretical constructions, requiring the active discrimination of data in the context of a problem. Suppose we wish to test the honesty of a die and propose rolling it a number of times, observing the number of aces. We are testing the hypothesis that the die is honest. If the proportion of aces diverges substantially from $1/6$, we shall regard the die as biased, and so reject the hypothesis. But what do we mean by "substantially"? We are testing a hypothesis we can neither prove nor disprove with absolute finality. It is possible for an honest die to yield all aces or no aces; it is possible for a crooked die to yield, by chance, exactly $1/6$ aces out of a long series of rolls. We must decide what we mean by a "substantial deviation"--and therefore on the rule of rejection for the hypothesis--in the light of the nature of the problem under investigation and the consequences of an erroneous acceptance or

rejection of the hypothesis. Suppose we decide to base our judgment on the outcome of a sequence of 120 rolls. We might set the criterion that we will regard the die as biased if we get less than 12 or more than 28 aces. We would then be using a criterion that would lead us to reject a true statistical hypothesis in 5 such experiments out of 100, for elementary probability considerations indicate 120 rolls of an honest die will produce results falling in our range of rejection in about 5% of the experiments.¹ We might reduce the probability of our mistakenly rejecting a true hypothesis by enlarging the deviation from $1/6$ aces that we would regard as not inconsistent with the hypothesis of the die's honesty. But then we would increase the probability of our making the opposite error, and allowing the die's bias to operate to the unfair advantage of its owner. The rule of rejection, which gives the statistical hypothesis its empirical character, depends on deliberation and judgment by the designer of the experiment. To base one's judgments on probability rules does not, even in the limit, eliminate the occasion for "active" thought.

Sometimes the introduction of this judgment about the acceptable risks in testing a hypothesis is described as the

¹ This is what is called the probability of a Type I error in statistical theory. The mean of the relevant binomial distribution, applicable to the number of aces from a series of 120 rolls of a die is $np = 120 (1/6) = 20$, and the standard deviation is $\sqrt{np(1-p)} = \sqrt{120(1/6)(5/6)} = 4.08$. $20 \pm 1.96(4.08)$ will include the central 95% of the area under the normal curve approximation to the binomial distribution, approximately 12 to 28 aces out of 120. See R. B. Braithwaite, Scientific Explanation, Chs. V through VII, for a convenient summary of the modern theory of statistical inference.

injection of an arbitrary, personal, or subjective element into inquiry. But if we generalize our example so that it becomes applicable to scientific investigation, the value assigned the rule of rejection is properly referred to the consensus of investigators in the continuity of inquiry, and it is no longer a matter of private opinion.

The rule of rejection is itself a statistical hypothesis. It is equivalent to the assumption that the supposedly random sample on which we base our test is drawn from a sampling distribution of samples of the same size, with the parameter under investigation as mean. This higher order hypothesis is also subject to test, and if it should be rejected, then a prior rejection of the lower order hypothesis would be reversed. To return to our example of the test of a die's honesty, we might get more than 28 aces in our series of rolls, and reject the hypothesis that the die is honest. But we might subsequently discover that the test was made under unusual physical conditions so that it could not be regarded as a random sample, it did not belong to a sampling distribution with the mean and dispersion postulated. Then we would have to reverse our previous rejection. This resting of probabilities on other probabilities in infinite sequence is evidence of the open and provisional character of empirical knowledge. Statistical hypotheses are never definitely rejected. Moreover, empirical investigation

can never lead to the final acceptance of a hypothesis,¹ since it can only provisionally reject it.

We can conclude this discussion of the nature of statistical hypotheses by reflecting on Peirce's statement that "probability is a continuous quantity."² It is a fraction lying between one and zero. "A true continuum is something whose possibilities of determination no multitude of individuals can exhaust . . . no collection of points placed on a truly continuous line can fill the line so as to leave no room for others, although that collective had a point for every value towards which numbers, endlessly continued into the decimal places, could approximate."³ The principle of continuity, Peirce said, "is the idea of fallibilism objectified, . . . the doctrine that our knowledge is never absolute but always swims . . . in a continuum of uncertainty and indeterminacy."⁴

1 A Type II error is the error of accepting a false hypothesis. The probability of this error can never be evaluated. Statisticians work out "performance tests" for a decision-making procedure; but these are only applicable to the special case of a choice between mutually exclusive hypotheses, the rejection of one implying the acceptance of the other. In general, hypotheses are not "accepted" on the basis of statistical observation, they are only "not rejected." This subject-to-rejection gives the meaning of "empirical." "In so far as a scientific statement speaks about reality, it must be falsifiable; and in so far as it is not falsifiable, it does not speak about reality." This is a paraphrase, by Karl Popper, of a well known remark of Einstein. (Popper, Logic of Scientific Discovery, p. 314.)

2 Buchler (ed), op.cit., p. 155

3 ibid., p. 354

4 ibid., p. 356

Since probability ratios can never be determined with final certainty, they have their significance only within inquiry as a continuing process. They never do away with the necessity for deliberation and judgment, as is required by Knight's doctrine of the elimination of the entrepreneurial function when uncertainties are replaced by calculable risks. The principle of continuity is inconsistent with the idea of certainty as an attainable attribute of empirical knowledge. But this means that it is also inconsistent with uncertainty as a determinable attribute of a determinate class of situations and events. Uncertainty is an abstract noun which refers to a quality of all kinds of doubtful or confused situations, prior to inquiry. In each situation the quality is unique, reflecting just what is doubtful; therefore, the difficulty of attempting to convert uncertainty into a causal force, useful in the explanation of concrete developments.

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Sometimes it is possible to put objects or events into classes, and estimate the proportion that is of a given kind. Then the evidence for a probability judgment can take a numerical form. But numerical probability has a different significance in different contexts. Consider the difference between the statement, "It's a fifty-fifty chance the business will fail," and the statement of a law in statistical mechanics, applying to the behavior of aggregates of gas molecules.

The first is most likely an appraisal by the speaker of his own powers of prediction, the second acquires meaning only within a complicated theoretical system. Calculations of probability take on a simple form with respect to games of chance, but this is because such games are designed to facilitate these calculations. There are equal probabilities of outcomes that can be exhaustively enumerated, as in the case of six-sided dice or roulette wheels. In all these cases, the statement of numerical probability is meaningful, but only in its context.

Thus, our ability to form classes and calculate numerical probabilities is not a matter that can be discussed prior to the specification of particular problems. From some points of view (e.g., that of an ant) every grain of sand is a unique individual. From another, we put all the stars and planets into a homogeneous class of "heavenly bodies." Knight's argument that a science of society is impossible because there are no stable classes in social or psychological events must be rejected on grounds that there are never any stable classes in unanalyzed subject matter, prior to inquiry.

This proposition, that the relative frequencies that express probability calculations do not preexist the problematic situations to which they apply, has a bearing on Knight's conception of risk. The numerical character of

estimates of actuarial probability is neither a necessary nor a sufficient condition for the insurability of a risk. For example, we might make numerical calculations as to the probability of failure of a new business. These might well be superior in reliability to the numerical calculation of the probability of a house burning. Yet the latter contingency is insurable, but the former is not. The reason is that the character of entrepreneurship would be entirely changed if profits could be insured.¹

This suggests that the essential condition for insurability is that the activity insured be independent of the fact of insurance. The ability to calculate actuarial probabilities and therefore to spread the risks, is a consequence, not a cause. This is indicated by J. M. Keynes's analysis of the activities of underwriters at Lloyd's of London. He found that what they did was to follow the practices of the bookmaker, spreading their risks so they could not lose, whatever happened. If demand for insurance against a contingency rose, the rate went up, though the probability of occurrence had in no way altered. "I believe, therefore, that the practice of underwriters weakens rather

¹ A similar point is made by Kenneth Boulding, Reconstruction in Economics, pp. 133-4. This point overlaps with the one made in our discussion of the contradictory character of the postulate of omniscience, perfect knowledge put forth as an essential condition for perfect competition. It is unclear that insurance is subject to diminishing returns. As more uncertainties fall into the category of risk and become insurable, the result would be a movement away from rather than toward perfect competition.

than supports the contention that all probabilities can be measured and estimated numerically."¹

In short, it seems reasonable to question the significance for economic theory of Knight's distinction between risk and uncertainty.

1 A Treatise on Probability, Ch. II, p. 24

(c) active and passive entrepreneurship

Perhaps the most striking conclusion to emerge from Knight's analysis of profit is the contention that the profit share is negative. This conclusion is based on the following argument. If entrepreneurs are overoptimistic they will tend to bid up the prices of resources so that these will exceed receipts from the sale of product. If they are pessimistic, they will tend to keep resource prices below prospective receipts. If deviations from an average state of expectation were a matter of chance, positive and negative deviations would cancel out, and the average rate of pure profit would tend toward zero. But Knight claims that the entrepreneurial class inclines toward overoptimism. (pp. 364-6) Therefore, profits are negative. He has repeated this contention many times, occasionally referring to, though not reproducing, statistical data that support it.¹

The reasoning Knight employs in support of the proposition that profits are negative can also be used to argue that the most favorable condition for the maintenance of high and continuing profits would be an economy with timid and

¹ See, e.g., Intelligence and Democratic Action, p. 98. "It is an essential fact, well known but generally ignored or flouted, that on the average entrepreneurs' losses equal or exceed their gains. This is in accord with theoretical expectations, and statistical investigation discloses no aggregate net profit, over substantial periods of time, as a share of social distribution." (The Economic Order and Religion, p. 103) It is not easy to conceive of statistical data that would provide a clear test of Knight's hypothesis. "We have . . . emphasized the fact that profit and imputed income are never accurately separated on either side of the dividing line. As there is no income which is pure profit so there is none which does not contain an element of profit." (Risk, Uncertainty and Profit, p. 366)

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hesitant entrepreneurs. And, in fact, this seems to be Knight's view. "The condition for large profits is a narrowly limited supply of high-grade ability with a low general level of initiative as well as ability." (p. 284)

It seems more reasonable to argue that entrepreneurial high spirits and high profits are positively rather than negatively correlated. An optimistic entrepreneurial class will act so as to realize its expectations. The prospect of rising prices will cause present prices to rise, and the larger future incomes which are the consequences of the higher prices will make possible the expected future increase. If there is excess capacity, there is no reason why more optimistic expectations should cause a sharp increase in resource prices. The main result will be an increase in employment. But even with full employment, an increase in resource prices will not reduce profits if prices rise at the same rate.

* * * * *

The paradoxical conclusion that initiative is unfavorable for profit suggests further examination of the uncertainty theory.

The theory, as has been suggested, is constructed by analogy with a particular view of mind. Deliberation takes place on a level of existence separated from the physical order in which overt bodily movements are publicly visible,

"true activity lies only in thinking, in deciding, in solving a problem as to how to act in the overt sense."¹
 The radical contrast between the "overt or physical action" which is a "physico-chemical process and presumably of the same character in the human body as elsewhere in nature,"² and the creative, problem solving activity which takes place in the mind parallels the contrast between the decision making entrepreneur and the passive recipients of contractual income. The entrepreneur "wills," and the capitalist and worker, like arms and limbs, execute.

With uncertainty present, doing things, the actual execution of activity, becomes in a real sense a secondary part of life; the primary problem or function is deciding what to do and how to do it When uncertainty is present and the task of deciding what to do and how to do it takes ascendancy over that of execution . . . a process of "cephalization," such as has taken place in the evolution of organic life, is inevitable, and for the same reasons as in the case of biological evolution (pp. 268-9)

In the previous discussion of the motive-force analogy (Chapter Three), the radical dualism between thought and action was criticized. There it was argued that intelligence is publicly observable in an individual's capacities and skills rather than a property of decision making or theorizing activities conducted on a different level of man's pluralistic existence. How does Knight's theory of enterpris

1 "Science, Philosophy and Social Procedure," in Freedom and Reform, p. 206

2 ibid.

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appear when looked at from the transactional point of view?

The two views yield contrasting accounts of the character of knowing. If uncertainty is confined to the mental order, inquiry is a process of removing doubt concerning a situation which is not affected by the knowing process. It is solely a matter of "making up one's mind." The mind is supposed to be the location of all free and creative activity. Yet by restricting it to its own plane of existence, Knight makes thought essentially passive.

If the idea is to be active, then it must function in and among processes and events of the common public world of space and time. Contingency and possibility are properties of these processes and events. If knowing is an active process, it is not a mere matter of eliminating subjective doubt. One must remove the causes of doubt, through changing the situation. The transactionist removes uncertainty from the mind and places it in the problematic situation which prompts inquiry.

By confining the mind to its own plane of existence, Knight means to secure a protected space in which the will can be free, but the consequence is to make thought passive. Does an analogous criticism apply to the theory of enterprise? The entrepreneur is supposed to be the active decision maker, the "mind" of the economic process. But does the identification of his function with uncertainty-bearing turn out to be inconsistent with the active role the analysis intends to assign him?

Let us outline the steps in Knight's analysis, which begins with the abstractions of the static state, wherein there is no entrepreneurial function, and proceeds by successively relaxing assumptions to the full complexities of a system of modern corporate enterprise.

In the static state, Knight supposes that individuals are organized into random groups cooperating in production. When the conditions of the static state are correctly formulated, there is "no room for property in any sense which differentiates it from productive capacities inherent in the person of the owner." (p. 105) The mechanism of economic organization would begin to function when all productive groups began to compete among themselves for new members, and each individual begins to seek out the group to whose product he can make the largest contribution.

The standard of what a group could afford to pay for a man is clearly the amount which he enables it to produce more than it would produce without him. In the final adjustment the individual's contribution to the income of the group is his contribution to the income of society as a whole, which he is under pressure to make as large as possible by placing himself in the position where he is really most effective . . . In the final adjustment the organization could not be changed without bringing uncompensated losses, and the total produce would be divided among all claimants by giving each his added produce. (pp. 1078)

Each kind of resource or "factor"¹ --each class of

¹ " . . . if we speak of 'factors' at all, there will be not three but a quite indefinitely large number of them." (p. 105)

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individuals with homogeneous capacities and endowments-- receives a reward equal to the value of its marginal product.

The analysis of the effect of uncertainty on economic organization proceeds in two stages. Knight first supposes that there is no economic progress, and considers the case of a static society with uncertainty. Then he goes on to the general case of the uncertainty associated with social progress. The separate consideration of uncertainty and progress is supposed to correct the reasoning of Clark's "dynamic theory of profit," the "confusion between the effects of uncertainty and those of progress, which are largely, though never quite completely separable facts . . . " (ftn., pp. 266-7) The assumptions required for a static state with uncertainty are said to be difficult to formulate, but Knight offers the following:

. . . we assume a population static in numbers and composition and without the mania of change and advance which characterizes modern life. Inventions and improvements in technology and organization are to be eliminated, leaving the general situation as we know it today to remain stationary. Similarly in regard to the saving of new capital, development of new natural resources, redistribution of population over the soil or redistribution of ownership of goods, education, etc., among the people. But we shall not assume that men are omniscient and immortal or perfectly rational and free from caprice as individuals. We shall neglect natural catastrophes, epidemics, wars, etc., but take for granted the 'usual' uncertainties of the weather and the like, along with the 'normal' vicissitudes of mortal life, and uncertainties of human choice. (p. 266)

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Even in an economic system without uncertainty, there "might be managers . . . for the purpose of coordinating the activities of individuals. But under conditions of perfect knowledge . . . such functionaries would be laborers . . . without responsibility . . . on a level with men engaged in mechanical operations." (p. 268)

But with the introduction of uncertainty, the character of the situation is altered.

In the first place, goods are produced for a market, on the basis of an entirely impersonal prediction of wants, not for the satisfaction of the wants of the producers themselves. The producer takes the responsibility of forecasting the consumers' wants. In the second place, the work of forecasting and at the same time a large part of the technological direction and control of production are still further concentrated upon a very narrow class of the producers, and we meet with a new economic functionary, the entrepreneur. (ibid.)

Occupations differ in the kinds of knowledge and judgment required for their successful direction, and individuals differ in their capacity for managerial authority and in their confidence in their own ability.

It need hardly be mentioned explicitly that the organization of industry depends on the fundamental fact that the intelligence of one person can be made to direct . . . the routine manual and mental operations of others. It will also be taken into account that men differ in their powers of effective control over other men as well as in intellectual capacity to decide what should be done. In addition, there must come into play the diversity among men in degree of confidence in their judgment and powers and in disposition to act on their opinions, to "venture." This fact is responsible for the most fundamental change of all in the form of organization, the system under which the confident and venturesome "assume the risk" or "insure" the doubtful and timid by guaranteeing to the latter a specified income in return for an assignment of the actual results. (p. 270)

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The form which the organization of the enterprise system takes is its way of adapting to the fact of uncertainty in economic life.¹ "The essence of enterprise is the specialization of the function of responsible direction of economic life, the neglected feature of which is the inseparability of the two elements, responsibility and control." It is the analysis of the entrepreneurial function into these two analytically distinct yet actually inseparable aspects which is the distinctive feature of Knight's treatment. However, as we shall see, entrepreneurship is related to uncertainty-bearing through an argument which makes taking responsibility imply control.

The analysis might have been more effectively presented--as we have suggested--if Knight had compared a situation with entrepreneurship, not with one of "omniscience," but with one in which each producer works independently, producing his own product, making his own decisions and taking the consequences for them. By contrast with such a situation of isolated independent producers, Knight's theory of enterprise attempts to

1 In the preface for the reprint of 1957, Knight describes "the case of two men ('workers') proposing to carry out a project together, with no other 'factors' involved. They would have a choice: either to negotiate agreement in advance on all details of what is to be done by each and the sharing of the result; or, a much simpler arrangement would be for one of them to take charge and assure to the other a more or less definite return, his own 'share' (positive or negative) to depend on the outcome. In a social ethos of free contract, the latter seems the more natural recourse, unless there is a 'familial' relation between the parties. This hypothetical case exemplifies all the theoretical essentials of entrepreneurship and profit." (p. lxi)

show that the institutions of the enterprise system provide for a special function, that of uncertainty-bearing, and that the ones who perform this function exercise the responsible control of production. This is a meaningful proposition in the sense that it is discussable because not obviously true. On the other hand, this does not seem to be the case with the contention that the profit share--along with the enterprise system, intelligence and human consciousness--would not exist in the absence of uncertainty.

The relationship of the two elements, responsibility and control, is brought out by considering the case of "pure and undivided entrepreneurship" (p. 288)--entrepreneurship "completely specialized in a pure form, responsibility and control completely associated." (p. 289) This follows from the assumption that no one has knowledge of another person's entrepreneurial abilities, and acts solely on his judgment of his own ability. "The laborer asks what he thinks the entrepreneur will be able to pay, and in any case will not accept less than he can get from some other entrepreneur, or by turning entrepreneur himself. In the same way the entrepreneur offers to any laborer what he thinks he must in order to secure his services, and in any case not more than he thinks the laborer will actually be worth to him, keeping in mind what he can get by turning

laborer himself." (pp. 273-4) In the absence of knowledge of another person's capabilities as entrepreneur, "no one would put his resources under the direction of another without a valid guarantee of the payment agreed upon, and no one could become an entrepreneur who was not in a position to make such guarantees without assistance, it being clear that no one would make such a guarantee for another."

(p. 289) In this simple case, there is no question about who is the entrepreneur and what is his function.

However, when men have knowledge on which they are willing to act of another man's capacities for entrepreneurship, this simple situation no longer holds. The entrepreneur can be located and his function defined only by following through an extended analysis, "entrepreneurship is no longer a simple and sharply isolated function." (*ibid.*)

The reason is that the control function and the guarantee function come to be exercised by different persons. This is the situation in the modern corporation.

The great complexity and difficulty in the analysis of business uncertainty and profit as the remuneration connected with meeting it arises from this peculiar distribution of responsibility in the organization. There is an apparent separation of the functions of making decisions and taking the 'risk' of error in decisions. The separation appears quite sharp in the case of the hired manager, as in a corporation, where the man who makes decisions receives a fixed salary, taking no 'risk', and those who take the risk and receive profits--the stockholders--make no decisions, exercise no control. (p. 293)

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The essential step in understanding the distribution of control and responsibility is, according to Knight, to "grasp this fact: What we call 'control' consists mainly in selecting someone else to do the 'controlling'." Responsible control depends not on knowledge of situations and facts, but rather on knowledge of other men's knowledge of these things, ". . . our . . . attention and interest shift from the errors in men's opinions of things to the errors in their opinions of men. Organized control of nature . . . depends less on the possibility of knowing nature than it does on the possibility of knowing the accuracy of other men's knowledge of nature, and their powers of using this knowledge." (p. 293)

The fundamental principle in directing organized activity is to form a judgment of the proportion of successful decisions an individual makes in a series of decisions. It is an application of the general principle of converting an uncertainty into a risk, through consolidation. Yet such a calculation can never be made by means of rational inductive techniques. It is an exercise not of intellect but of Bergsonian intuition.

We form our opinions of the value of men's opinions and powers through an intuitive faculty of judging personality, with relatively little reference to observation of their actual performance in dealing with the kind of problems we are to set them at . . . The final decision comes as near to intuition as we can well imagine; it constitutes an immediate perception of relations, as mysterious as reading another person's thoughts or emotions from subtle changes in the lines of his face. (p. 293)

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In the light of this analysis of the nature of responsible control, it is held that the separation of corporation responsibility and control, the common stockholders taking the former and the hired manager exercising the latter, is illusory; "when control is accurately defined and located the function of making decisions and assuming the responsibility for their correctness will be found to be one and indivisible." (p. 294) It is the body of common stockholders who run the risk, and who are therefore the entrepreneur.

The paradox of the hired manager . . . arises from the failure to recognize the fundamental fact that in organized activity the crucial decision is the selection of men to make decisions, that any other sort of decision-making or exercise of judgment is automatically reduced to a routine function. All of which follows from the very nature of large-scale control, based on the replacement of knowledge of things by knowledge of men . . . (p. 297)

Profit is associated with true uncertainty, which requires "an exercise of ultimate responsibility which in its very nature cannot be insured nor capitalized nor salaried." Executive or leadership characteristics are demonstrated in the capacity to transform the uncertainties of opinion into measurable probabilities by forming valid judgments of the abilities of men. As soon as a man's capacities have been evaluated, "the compensation for exercising them can be competitively imputed and is a wage; only, in so far as they are unknown or known only to the possessor himself, do they give rise to a profit." (p. 311)

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The ability to make these evaluations of others' capacities is held to require rare gifts of insight. "The powers and the attributes of leadership form the most mysterious as well as the most vital endowment which fits the human species for civilized or organized life, transcending even that power of perceiving and associating qualities and relations which is the true nature of what we call reasoning." (ibid.)

The final stage in Knight's analysis comes when he relaxes the assumption of an unchanging economic system, characterized only by the "usual uncertainties" and "normal vicissitudes" and deals in full generality with a progressive economy. Now there is required "an exercise of judgment of the highest type called for in the business world." The savings of individuals must be converted into capital goods. "The individuals who control the conversion of saved surpluses into capital goods must take the responsibility for their decisions, though as in the former case the 'control' may take the form of selecting some one else to exercise immediate control as a routine task performed without responsibility for the results." (p. 325)

* * * * *

Knight's theory of enterprise follows from a particular conception of decision making. It is not the decision or judgment itself which requires the peculiar talents of the

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entrepreneur, but the assumption of responsibility for its correctness. As we noted, this was F. B. Hawley's view, ". . . the profit of an undertaking, or the residue of the product after the claims of land, capital, and labor (furnished by others or by the undertaker himself) are satisfied, is not the reward of management or coordination, but of the risks and responsibilities that the undertaker . . . subjects himself to."¹ Knight paraphrases Hawley's "contention that the hired manager makes decisions, but the enterpriser takes the consequences of decisions, and that the former is therefore not an enterpriser," (p. 298) and implies his agreement.

To see Knight's entrepreneur existing in pure form, one would have to find a business man who contributes nothing to the business but responsibility. He would not work for the firm, or put any capital in it, either on a rentier or an equity basis, but would exercise his "mysterious and vital endowment" in guaranteeing the results of the firm's operations to other participants. "The nearest approach to an entrepreneur only would be a man who borrowed all the resources for operating a business and then hired a manager and gave him an absolutely free hand." (p. 300)

But Knight goes on to point out that "such a man would have to be more than an entrepreneur in relation to some other business, or he would not be a true entrepreneur, making

¹ From an article in Quarterly Journal of Economics, Vol. XV, p. 106, quoted by Knight, op.cit., p. 42.

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responsible decisions, in the business in question." (ibid.)
 From the point of view of neoclassic taxonomy,¹ the difficulty with the Hawley-Knight analysis is in the basis of distinction between the entrepreneur and the capitalist. An individual could not become a Knightian entrepreneur unless he were first an owner of property. At times, Knight argues that he could borrow the money to assume the responsibility of entrepreneurship (p. 40), but as he observes at other times if the entrepreneur had no resources to pledge, the entrepreneurial function would fall on the lenders who would sustain a loss in the event of failure. (p. 306)

"It will be kept in mind that the basis of effective assumption of responsibility is necessarily either the ownership of property or the creation of a lien on future human productive power and is in fact almost altogether the former." (p. 351)

Thus, for Knight, entrepreneurship is really a form of property ownership. "In the existing system of things the ultimate responsibility centers almost altogether in the ownership of property 'at risk' in the business." It is true that "in so far as the reward of any service is contingent upon the success of the undertaking, the owner of that service . . . exercises judgment and wields power

1 A taxonomy is a system of classification--such as those used by biologists to classify species. Knight offers a functional analysis of income distribution, a classification of income forms on the basis of the productive service performed by the recipient.

250 . . . But the greater part of the uncertainty and power are centered in the ownership of certain property which is placed in the position of guaranteeing the contractual income of the other property and that of the labor used in the business." (p. 350)

Knight claims that previous discussions of profit had erred in treating it as a kind of labor income, a "wages of management." "The connection with property income is enormously more common, direct, and close. The residual share of income falls of necessity to the person in responsible control of a business; hence in most cases to a person who receives a property income . . . The important distinction for the purposes of theoretical analysis is that between pure residual income or pure profit and property income." (p. 307)

* * * * *

It will be useful to compare the Knightian guarantor against unmeasurable risks with Schumpeter's innovating entrepreneur. For Schumpeter, "the entrepreneur is never the risk bearer. The one who gives credit comes to grief if the undertaking fails . . . Risk-taking is in no case an element of the entrepreneurial function. Even though he may risk his reputation, the direct economic responsibility of failure never falls on him." ¹ The entrepreneurial

¹ Theory of Economic Development, p. 137

function "consists in getting things done," not in assuming the responsibility for others doing them.

. . . the function of entrepreneurs is to reform or revolutionize the pattern of production by exploiting an invention, or, more generally, an untried technological possibility for producing a new commodity or producing an old one in a new way, by opening up a new source of supply of materials or a new outlet for products, by reorganizing an industry and so on

. . . To undertake such new things is difficult and constitutes a distinct economic function, first, because they lie outside the routine tasks which everybody understands and, secondly, because the environment resists in many ways that vary, according to social conditions, from simple refusal either to finance or to buy new things to physical attack on the man who tried to produce it. To act with confidence beyond the range of familiar beacons and to overcome that resistance requires aptitudes that are present in only a small fraction of the population and that define the entrepreneurial type as well as the entrepreneurial function. This function does not essentially consist in either inventing anything or otherwise creating the conditions which the enterprise exploits.¹

In order to innovate, to "carry out new combinations" among resources, the entrepreneur must have access to credit. He must bid to take existing means of production away from their present employment. "To provide this credit is clearly the function of that category of individuals which we call 'capitalists'. It is obvious that this is the characteristic method of the capitalist type of society--and important enough to serve as its differentia specifica--for forcing the economic system into new channels, for putting its means at the service of new ends . . . "² The

1 Capitalism, Socialism and Democracy, 2nd Ed. (1947), p. 132

2 Theory of Economic Development, pp. 69-70

"capitalist par excellence" is the commercial banker, "since all reserve funds and savings . . . usually flow to him, and the total demand for free purchasing power, whether existing or to be created, concentrates on him . . . He is the ephor of the exchange economy."¹ Schumpeter's risk-bearer is the capitalist, "the owner of the means of production or of the money capital which was paid for them, . . . shareholders . . . are never entrepreneurs, but merely capitalists, who in consideration of their submitting to certain risks participate in profits."²

Schumpeter's capitalist, who finances the innovator and runs the risk, corresponds to Knight's entrepreneur, the uncertainty bearer. The rare talent which is rewarded by profit is not, for Schumpeter, an ability to "judge men's powers of judgment," but actively to overcome inertia in regard to methods of production, and to make possible the introduction of novel techniques. On the other hand, there is really no counterpart of Schumpeter's innovator in Knight's system. "The knowledge on which the higher control is based is . . . knowledge of a man's capacity to deal with a problem, not concrete knowledge of the problem itself. . . The responsible decision is not the concrete ordering of policy, but ordering an orderer as a 'laborer' to order it."³

1 ibid., p. 74

2 ibid., ftn., p. 75

3 Risk, Uncertainty and Profit, pp. 296-7

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Schumpeter's entrepreneur is a figure elusive enough. There is no identifiable class of functionaries who make up the economy's supply of entrepreneurial talent at a given time. "The carrying out of new combinations can no more be a vocation than the making and execution of strategical decisions, although it is this function and not his routine work that characterizes the military leader. Therefore the entrepreneur's essential function must always appear mixed up with other kinds of activity, which as a rule must be much more conspicuous than the essential one."¹

However, it seems that the Knightian entrepreneur is a figure even more elusive than the Schumpeterian one. In the simplest case, when entrepreneurship is completely specialized in a pure form, the entrepreneur exercises control over the production process and simultaneously guarantees the passive participants against loss. Under these conditions, there is a clear distinction between the entrepreneur and the passive resource suppliers. But when one comes closer to "the state of affairs in real life," where "entrepreneurship is no longer a simply and sharply isolated function," but "partially specialized and more or less distributed," (p. 289) the conceptual difficulties mount.

1 Theory of Economic Development, p. 77

In the modern corporation, the decision maker is the hired manager, while the "mysterious and vital powers" involved in taking responsibility are exercised by the body of common stockholders. (p. 293) Knight's characterization of modern corporate enterprise in terms of a separation of responsibility and decision making can be contrasted with recent tendencies to describe the corporation as a device for separating passive ownership from active control.¹ However, even this relatively simple, if unplausible, designation of the body of common stockholders as the true entrepreneur is modified by Knight. There is an element of entrepreneurial responsibility in furnishing resources under a nominal contract for a fixed return. "It is seldom true that guarantees given can be regarded as absolute. If they are not, the owner of resources is taking a certain share of responsibility or risk, obviously." (p. 300) "The distinction between stocks and bonds tends to fade out." (p. 301) Thus anyone who stands to lose by the course of events turning out differently from what was anticipated performs an entrepreneurial function. At one point, Knight suggests that the wages of labor are a close approximation to a guaranteed contractual return, so the worker is most remote from entrepreneurship (pp. 301-2). But he later points out that the

1 Adolf A. Berle, Power without Property (1959), Ch. II

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risk of destruction and total loss is as great for the laborer as for the property owner, and the consequences of such loss vastly more serious. Given the failure of a business, the laborer suffers a loss of specialized skill and training. The cost of acquisition of such skills having been borne by the worker, the loss falls on him. (pp. 355-6) From this point of view, the worker is charged with much of the responsibility of the entrepreneur.

The question is whether any group or class performs the entrepreneurial function--"assuming the risk," "insuring the doubtful and timid"--according to Knight's account of the rules of the game of corporate enterprise. At the end of his discussion of the various kinds of distribution of responsibility and risk, Knight identifies the entrepreneur not with the body of common stockholders but with a "small group of 'insiders', who are the real owners of the business." (p. 359) He says that the idea that ownership is dispersed among the large number of stockholders in some of our large corporations is misleading. "Most of these do not regard themselves and are not regarded as owners of the business. In form they are such but in substance they are merely creditors, and both they and the insiders count upon the fact. The great companies are really owned and managed by small groups of men who generally know each other's personalities, motives and policies tolerably well." (ibid.)

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Studies of modern corporate enterprise do not support Knight's view that this is the typical pattern of organization in modern large-scale business--a management group directly in control but feeling accountable to a small number of influential stockholders who collectively function as true Knightian entrepreneur--though such an arrangement may have been more common at the time Knight wrote. The history of corporate enterprise during the twentieth century has been divided into three periods.¹ At the turn of the century, "absolute control," a stockholder or small group of stockholders who could dominate the management "was probably the norm." During the First World War and the twenties this pattern was replaced by "working control," holders of less than majority stock operating in cooperation with management. Now, we have "management control" as the typical pattern: ". . . no large concentrated stockholding exists which maintains a close working relationship with the management or is capable of challenging it . . . Theoretically it is possible for someone outside management to mobilize the army of small stockholders, aggregate their votes, and displace the existing directors. But the task is huge,² the expense great, and the results problematic."

1 Berle, op.cit., Ch. II

2 ibid., pp. 72-3

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Moreover, the idea of "insiders" exercising the entrepreneurial function hardly seems consistent with Knight's view of entrepreneurship as guaranteeing the "doubtful and timid" against the hazards of change. Unless they actually owned most of the common stock, the insiders would not be placing their own property in an exposed position. They would be exercising power without responsibility, really transferring the entrepreneurial function, in Knight's sense, to the mass of small stockholders, creditors and workers.

In more recent discussions, Knight has tended to an even more simplified account of the common stockholders as collective entrepreneur, omitting the restriction to a small group of insiders. "The real management group is the owners of the common stock. Theirs is the real initiative, and they take the risk of being right or wrong." (1950)

* * * * *

Knight's theory of enterprise is the consequence of applying a particular conception of the "creative mind" to the economic system. According to the process-procedure dichotomy which is fundamental to all his thought, uncertainty is the correlate of all problem solving activity in contrast with the mistake-proof mechanical processes of

1 "The Determination of Just Wages," Glenn Hoover (ed) Twentieth Century Economic Thought

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physical nature. Analogously, we have the contrast between the perfectly competitive economic order of omniscient beings, and the "cephalized" economic system with uncertainty. The significant change that occurs when the dichotomy is applied to the economic system is that it becomes possible, according to Knight, to separate the uncertainty from the problem solving. The entrepreneur is not the decision maker, the creative innovator who directs economic change, he is the uncertainty-bearer. His function--Knight claims he can only partially fulfill it--is to guarantee the "doubtful and timid," the contractual income recipients, against contingencies he does not himself create. He is an insurer specializing in the kind of risk for which one is unable to compute an actuarial probability.

We have argued that the identification of creative thought with liability-to-err makes the knower a passive spectator who "makes up his mind" rather than actively intervenes to change a problematic situation. It does turn out, as we suggested, that a similar criticism applies to the conception of the entrepreneur as uncertainty-bearer. Though the analysis begins by calling him the "central figure" in the enterprise system,¹ in the end he is assigned a strangely passive role.

1 Risk, Uncertainty and Profit, preface, 1st Ed., p. xi

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Viewing Knight's theory of profit in a broad historical context, one feels it reflects these influences.

First, there is the growth of the modern corporation, together with the development of corporate accounting as an academic discipline. Knight attributes the failure of the British classical economists to distinguish profit from interest to the unimportance in their day of the corporate form. (p. 23)

Second, there is the emphasis on administration in rationalizing the existing rules of income distribution. The existing arrangements are defended on the ground that they allow full scope to free decision making, and fairly allocate the related uncertainty-bearing. The theorist no longer searches for a "pain" analogous to the pain of labor--such as that of "abstinence" or "waiting"--to justify the receipt of non-labor incomes.

Third, the theory of profit is associated with the "purification" of economic theory, its reinterpretation as a highly abstract science similar to the abstract physical sciences. This is a movement of the later nineteenth and early twentieth centuries that goes on alongside the reinterpretation of the theoretical schema of the physical sciences, by such philosopher-mathematicians as Russell and Poincaré, in response to developments within the physical sciences.

It seemed that the theoretical systems of these sciences kept moving further away from the objects of ordinary experience. Orthodox economics was held to be also a highly abstract theoretical system. The existence of profit is evidence of a gap between theory and actuality, a gap, so it is held, that is inherent in the nature of scientific theory.

(3) The Productivity Theory of Interest

The theory of enterprise seeks to place the entrepreneur at the center of the analysis of the pricing system. The theory of capital contributes to this end, since it is intended to show that no relevant economic distinction can be drawn between broad classes of factors of production, as in the classical tripartite schema. The relevant distinction is between "active" enterprise and the "passive" forms of capital. The doctrine of the multiplicity of factors is vigorously argued in Knight's early writings, but he later came to believe that a final elimination of the classical division required an extensive reworking of orthodox capital theory. Originally, he had presented a view of production which described an investor as "advancing" present consumer goods to productive agencies, which were then available for the construction of new equipment. He held that the classical subsistence fund, made up of advances to laborers, was a correct account of the nature of capital, except for the failure of the classics to include other, non-labor productive resources, among those who received the advances.¹ However, he came later to believe that a fund of advances logically entailed a distinction between "original" and

1 Risk, Uncertainty and Profit, p. 161 and ftn., p. 162. "The classical writers' view of capital as 'advances to laborers' was correct except for the failure--natural from their labor theory point of view--to include the other productive factors as well as labor."

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"produced" factors, the former receiving the advances which made possible the "delay period" required for production of the latter. He therefore began, during the 1930's, a series of attacks on the orthodox capital theory, as presented in the works of Böhm-Bawerk and his followers. The essential fallacy of this theory, according to Knight, is its concept of an "average period of production," with its corollary commitment to a classification of factors of production into original and produced.

(a) advances versus synchronization economics

A fruitful way of approaching Knight's attack on roundaboutness is to recall Marx's discussion of the "elementary factors of the labor process"--the personal activity of man, the subject of work, and the instruments of work.¹ The primordial labor process as it exists "independently of the particular form it assumes under given social conditions" is a process involving man's metabolism with nature, a recurrent cyclical process of physical activity and bodily recuperation. "Labor is, in the first place, a process in which both man and nature participate, and in which man of his own accord starts, regulates, and controls the material re-actions between himself and nature. He opposes himself to nature as one of his own forces, setting in motion arms and legs, head

1 Capital, Modern Library Ed., p. 198

and hands, the natural forces of his body, in order to appropriate nature's productions in a form adapted to his own wants."¹ This primitive model is an effective presentation of what may be called the fundamental economic situation: man manipulating the objects of the physical environment, appropriating "nature's productions." The pain of labor is succeeded by a cessation of pain in a repetitive process that is part of universal human experience. Economic explanation consists in reduction to this primordial situation.

The theory of social economic organization is concerned with the principles of cooperation in the provision of economic needs. But the earlier economists still conceived the economic problem as one of man's metabolism with nature. Laboring is a physical process, involving the active manipulation of "nature's productions." The product is a material good, deriving its utility from its ability to serve the body's elemental need for sustenance and shelter.

The model of the economic process which Adam Smith and the classics took over from Quesnay and the Physiocrats is called by Schumpeter "advances-economics" (Vorschussökonomie).² According to this view of economic organization, a precondition of social production is the existence of a stock of goods; in the simplest model, these are consumer goods.

1 ibid.

2 Theory of Economic Development, ftn., p. 96

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This stock of goods is Capital. It is the source of "advances" paid out to the "productive" factor (either labor or land, according as one is a Classic or a Physiocrat, or perhaps both the "original factors") which returns the advance with a surplus. The problem of economic growth is essentially that of increasing the stock from which advances are made, and so increasing the possibility of "productive" as opposed to "unproductive" labor. Economic activity is described by means of a sequence analysis. It is seen in the form of a flux and reflux of advances. It is possible to follow the variations on this general pattern, from Cantillon and Quesnay, through the classics and Marx, down to its most sophisticated formulation in the Wicksellian version of Böhm-Bawerk's theory, and even, as we have seen, to Knight's Risk, Uncertainty and Profit. "In the real sense, of course, only living human beings, and self-perpetuating natural forces, are productive; only the original factors--man and nature. But the productivity of both become, or at any rate may become, greater if they are employed for more distant ends than if they are employed for the immediate production of commodities."¹

Among the more celebrated variants of the pattern of advances-economics is the classic theory of the wages fund, the view that the wage rate, at least in the short run, is

¹ Knut Wicksell, Lectures I, p. 150

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determined by the relationship between the number of workers and the size of the subsistence fund. In accordance with this doctrine it was held that the "demand of those who live by wages cannot increase but in proportion to the increase of funds which are destined to the payment of wages."¹ This was an unpalatable conclusion to those who believed in possibilities of improvement for the working class, through their own efforts, because it suggested that laborers could not improve their condition except by saving and becoming **capitalists**. It was argued that wages were not paid out of a preexisting capital stock, but out of the current product of labor itself. It was suggested that a "wages flow" would be more realistic than a "wages fund." (Newcomb, Taussig)

It was J. B. Clark who systematized these dissents from the received view of capital as advances, in his idea of synchronization. In the Clarkian static state, production and distribution are simultaneous, there is no lag between input and output, no "waiting" for which the capitalist as abstainer must be compensated.² Some productive processes may take fifty years, others only one year. But if the fifty year process is started anew each year, the current input may be regarded as the cost of the current output, just as in the case of the one year process.³

1 Adam Smith, Wealth of Nations, Book I, ch. i

2 The Distribution of Wealth, pp. 133-6

3 ibid., pp. 131-3

Within this conceptual framework, the idea of a wages-fund had no place. An essential feature of Clark's analysis was a distinction between "capital goods," the concrete instruments of production, and "capital," as an "abiding fund" of values. While capital goods are continually being destroyed--such destruction is inherent in their use--"capital" itself endures. "It lasts; and it must last, if industry is to be successful. Trench upon it--destroy any of it, and you have suffered a disaster."¹ When the wages fund theorist claims that "wages are paid out of capital" does he mean "the abiding fund of productive wealth"? Then the fund must be periodically depleted and then built up again, but this cannot be so if it is permanent and enduring. If he means "capital goods," he is only stating the triviality that consumer goods come out of inventories. This, however, is "no reducing of capital, though there may have been a withdrawing and a replacing of the tissues of it."²

Knight's forays against the theoretical structure of Böhm-Bawerk and his followers are, in effect, efforts to promote the claims of the Clarkian synchronization model to replace once for all the advances model as the correct picture of the enterprise economy. For Knight, synchronization implies a fundamental alteration in the meaning of the term, "productive," and the related words, "production" and "product." Production is no longer thought of in the sense of

1 ibid., p. 117

2 ibid., p. 122

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creative activity. The economic problem is not one of making provision for labor or the "primary factors" so that their creative powers can be "productively" rather than "unproductively" utilized. Such questions as those of the "ultimate sources" of economic energy are to be avoided, as "metaphysical," having irrelevant ethical connotations. One guarantees this limitation of the economist's interests through an exclusive concern with the problem of allocating given resources, "production consists of using 'productive agents' of all kinds in a relationship of symmetrical cooperation," with a "stream of consumable services or satisfactions as the ultimate product."¹ Instead of productive as "manipulative" or "creative,"² productive means merely scarce.

To illustrate Knight's proposed redefinition, suppose one visited factories and shops and observed workers engaged in their daily tasks, using their faculties to manipulate and reshape objects. According to the conception which Knight proposes, these overt activities do not constitute production. What one can observe are the operations devoted to maintaining, replacing, and adding to capital. This is gross capital formation, but these overt acts are not

¹ "Capital and Interest" (1946), reprinted in American Economic Association, Readings in the Theory of Income Distribution, p. 387

² Cf. in this connection the remarks of Alvin Hansen in A Guide to Keynes, p. 155. Hansen criticizes Keynes's statement in Chapter 16, General Theory, that capital is valuable because it is scarce rather than because it is productive. Hansen says that there is no economic meaning that can be given the term productive except scarce. This is true in the neoclassic, marginalist lexicon. But Keynes is using the term in the classic sense, whereby it means creative, capable of yielding a surplus.

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production. Production is not the creation of tangible wealth, but the rendering of service. In advanced economics, labor and land cooperate to create wealth. In Knightian synchronization economics, wealth is an agency by which service is rendered.

"Perpetual service income" becomes the primary datum of economic analysis. The economic problem is conceived as the derivation of the values of income yielding assets of all kinds from their anticipated future returns. Attention is shifted from the overt act of production to an act of valuation. Production is the creation, not of things, but of values.

Thus, productive means scarce, subject to valuation. The nature of the service rendered--whether its scarcity is due to the effort involved in rendering it, or the creative ability required, or its uniqueness--is a "technical detail," outside the scope of the economist's proper interests. Production yields its product "now," either in the form of current consumption, or future consumption which is capitalized into present asset value. The latter counts as current investment. There is no time lag. All productive resources are treated alike, all subject to valuation in terms of their contribution to the flow of income.

Knight in effect urges economists to view the economic process through the eyes of a corporate accountant, valuing

assets, leaving the technical details of production to architects, engineers, plumbers and carpenters. A succinct way of summarizing Knight's proposed reconstruction of economics is to say that it is a replacement of the theory of production with a theory of the valuation of assets.

* * * * *

We shall discuss Knight's capital theory by first considering his criticism of the Böhm-Bawerkian theory, and then turning to his criticisms of the capital and interest theories of Irving Fisher.

Böhm-Bawerk was a negative influence on Knight. That of Fisher was more positive. In his earlier writings on capital and income Fisher had in effect proposed a "philosophy of accounting," really a interpretation of modern corporate accounting in terms of marginal utility. The result was an "actuarial man" who manipulated capitalization formulae with the same facility as the earlier economic man had balanced his more elementary pleasures and pains. Knight's view of "perpetual service income" as the fundamental notion in economic analysis, from which capital value is derived, owes much to Fisher, and his ideas of the treatment of stocks and flows in the traditional demand-supply analysis were developed in criticism of Fisher.

(b) the period of production

We begin our discussion of Knight's attacks on the idea of a period of production with a simplified model of the so-called Austrian theory of capital.

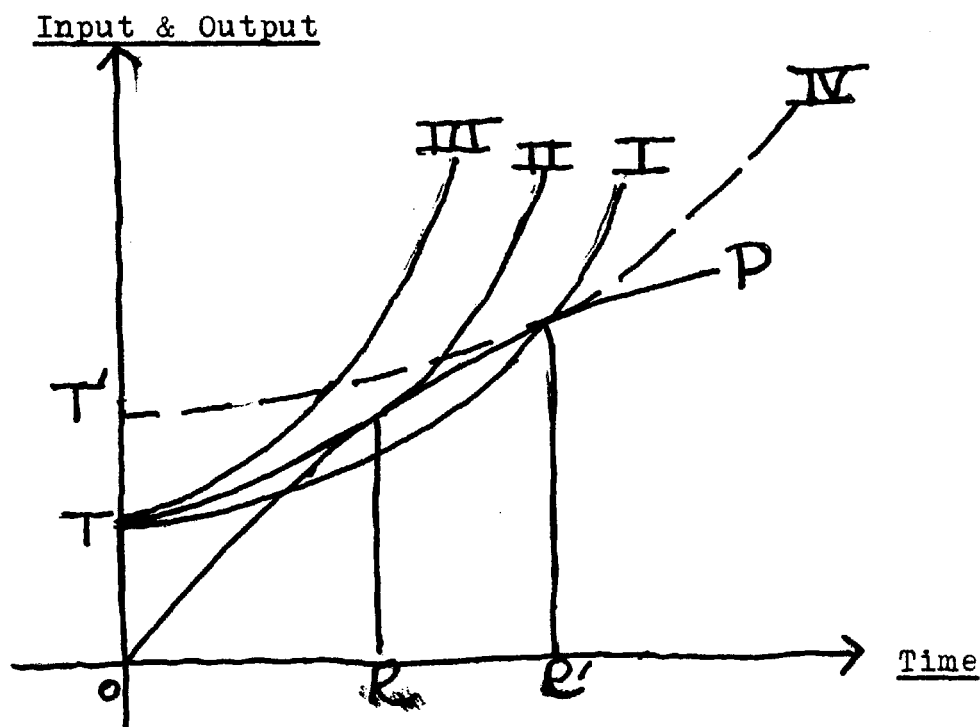


Figure 1

Figure 1, borrowed from Wicksell,¹ shows the value of input (grape juice or newly planted trees) plotted vertically, and time plotted horizontally. The curve OP shows the growth in the value of the grape juice as it mellows into wine

¹ Lectures I, p. 180. Wicksell marks off the vertical axis logarithmically.

² The curve is the same as the Knightian total product curve (Risk, Uncertainty and Profit, p. 100), except that the complication about the early stage of increasing returns and the late stage of absolutely falling returns is omitted, and the variable input, for Wicksell, is time.

The entrepreneur (or investor) is desirous of maximizing the return on his investment. The discount lines I, II, III, show various rates of growth. The highest one III is not available to the investor, since it lies above the line OP showing the growth in the value of the original investment. The lowest one I is available, but would be rejected in favor of II, which just touches the curve. The slope of OP gives, for any point, the marginal growth rate. The discount lines I, II, III, give various average growth rates. The tangency of II to OP reflects the condition that the average growth rate is equal to the marginal growth rate. At this point, the average rate is maximized. This is equivalent to choosing the "period of production" OR.

The Böhm-Bawerkian-Wicksellian theory is constructed by applying this theory of the maximized average rate to output as a whole. The vertical distance OT now represents the present output of labor or of "original factors," and the capitalistic nature of production is regarded as a function of the length of horizontal distances like OR, the "average period of production." Increased thrift on the part of the public will bid up the prices of the input of the original factors, so that the height of the ordinate at the origin will rise to OT'. The discount curve will become flatter, as indicated by the dashed line IV, and will touch the curve

OP at a point further to the right. IV represents a lower rate of interest, and the corresponding average period of production will be extended from OR to OR'.

The so-called Austrian model (though it was never accepted by Menger and Wieser) is therefore a variation on the advances model. Specifically, the classical subsistence fund is taken as representing a "capitalist process of production" rather than an aggregate of potential wages.¹ But the problem is essentially Ricardo's problem of the division of the product between broad classes of factors. By applying marginal productivity analysis to the subsistence fund, the ancient doctrine is converted into an analysis of the relationship between changes in wage rates and the degree of mechanization as represented by the length of the period of production. The theory is a generalization of the classic wages fund doctrine, combined with a rejection of the Malthusian iron law, which kept the long run wage level at minimum subsistence.

The series of essays containing Knight's attacks on the Böhm-Bawerk theory drew broad support among economists.² The Austrian side was defended by F. A. Hayek and Fritz Machlup. The debate was compared to one a generation earlier between J. B. Clark and Böhm-Bawerk.

¹ See Wicksell, op.cit., pp. 167-8

² See Hayek's essay, "The Mythology of Capital," reprinted in American Economic Association, Readings in the Theory of Income Distribution. A bibliography of the debate is given by Nicholas Kaldor, "The Controversy on the Theory of Capital," Econometrica (1937).

Knight claimed that the Austrian theory stood or fell with two assumptions. First, that capital goods are produced by the services of agencies which are not capital goods, but belong to other classes, "original factors." Second, that individual capital goods have histories of production, consumption, reproduction. The process of capital formation is regarded as the investment of non-capital services looking forward to disinvestment in consumption.

Knight denies that capital goods are ever produced by noncapital goods, or ever were so produced, even back to Adam and Eve. What produces any capital good is simply the economic system in which it originates, functioning as a unit. From this it follows that every capital good cooperates in its own replacement. Therefore, the only correct way to look at capital is as a fund, permanently maintained, rather than as a stock of produced means of production, periodically worn out and replaced.

No meaningful classification of resources can be made on the basis of whether they are produced or original. Capital goods are simply productive assets, subject to increase by investment, and every kind of productive asset can be fitted into this classification. Each is unique and

irreplaceable, but at the same time, any item can be placed in a class subject to quantitative increase. If there is a shortage of labor, investment will be directed into the improvement of skills. If there is a shortage of Mona Lisas, investment will be directed into facilities for their wider display.

Since there are no noncapital assets, there is no way of computing an average period for their investment. Knight says that investment periods are either zero or infinity. In the case of current consumption, the period is zero, because consumption is provided for by the synchronous input of the services of resources. In the case of saving, the period is infinity, because all items added to wealth must be regarded as assets yielding returns in perpetuity. Their yields can be reckoned only after provision for their maintenance and replacement as permanent assets.

Thus the capitalist does not "wait" for postponed consumption, he "abstains." However, his abstinence does not involve a "pain," but only a choice between consumption and saving.

On a superficial view it was perhaps natural to think that the production of capital goods and their subsequent use to produce income is indirect production of future goods, and that the amount of capital will correspond with the degree of indirectness or the interval between production and consumption. But . . . this view is untenable. In a stationary or progressive economy, investment is in fact permanent, and in reality most single items are committed with a presumption of permanence, or even reinvesting part of the yield . . . The result of production, either in consumed service or growth of capital, is always strictly simultaneous with production itself, from instant to instant.¹

1 Risk, Uncertainty and Profit, preface, pp. xxxix-xl

(c) stocks and flows

The theory which Knight substitutes for the period of production model is a variation of the Clarkian synchronization model, but his particular formulation owes a debt to the writings of Irving Fisher.

The period of production approach is an attempt to apply marginal analysis to the Ricardian problem of macrodistribution. Fisher's theory is concerned with the rate of interest, not as a distributive share--the "wages of capital"--but as an equilibrator of savings and investment, as an allocator of new capital goods, and as part of a capitalization formula. Knight credits Fisher with the insight that the "major analytic distinction" in economic theory is between capital and income rather than between labor, land and capital.¹ But it is evidently more accurate to view Fisher's innovation as a reformulation of the economic problem--the substitution of a theory of the valuation of assets for a theory of the distribution of income. Knight accepts Fisher's reformulation of the economic problem, though he is critical of certain aspects of Fisher's treatment.

Knight attacked Fisher's attempt at an eclectic approach² to the determination of the interest rate. Fisher thought

1 "Capital and Interest," American Economic Association, Readings in the Theory of Income Distribution, p. 388

2 "Professor Fisher's Interest Theory: A Case in Point," Journal of Political Economy (1931)

of himself as ending a long period of controversy between psychological time preference, or *agio*, theorists and productivity theorists by arguing that both these elements were required, like the two blades of Marshall's scissors.

Fisher applied an ordinary demand-supply analysis to the capital market, with "impatience to spend" underlying an upward sloping supply curve, and "opportunity to invest" reflected in a downward sloping demand curve. Knight claimed that this was a misapplication of the demand-supply schema, involving a misunderstanding of price theory.

According to Fisher, utility and cost were equal partners in the determination of exchange value. But Knight made use of the Marshallian time period analysis¹ to show that their relative weight varied with the time allowed for adjustment following a change in demand. If we consider the consequences of a change in demand in a "momentary" situation, then it is utility that determines price. The fish are displayed on the dock, their supply cannot be increased until the boats can go out again. Supply is perfectly inelastic, represented by a vertical supply curve. Therefore price is demand determined. In a "short-run," we can allow for the fact that, at higher prices, the boats can be worked more intensively, so supply will respond to the higher

1 Alfred Marshall, Principles of Economics, pp. 369-79

price. In this short-run, utility and cost play coordinate roles. However, in the "long-run," new boats can be constructed, existing facilities expanded. In perfect competition, with perfect mobility of resources, the industry will operate under conditions of constant cost. The supply curve becomes a straight line, parallel to the horizontal axis. Price is determined by cost of production. If we keep our attention fixed on the long-run, changes in demand can alter the amount bought and sold, but can have no effect on the price.

Fisher attempted to adapt the Marshallian short-run analysis to the capital market, but Knight claimed that it was inappropriate for this purpose. The correct analysis was either the momentary or the long-run analysis, according to what one took as demand and as supply. "One may regard interest as the price of the commodity, use-of-capital, or savings as the price of future income."¹ In the former case, the supply is the total amount of productive wealth accumulated in all past time. Though it is being continuously increased by savings, it must, for a short period of time, such as a year, be treated as a datum, the increment due to current savings negligible. The supply curve is perfectly vertical, exactly like the momentary situation in Marshall's fish market. But the demand is highly elastic.

¹ "Interest" (1932), reprinted in Ethics of Competition, p. 261

Knight thinks that all the supply of "use-of-capital" offered will be taken for investment purposes at only slightly falling, or even constant, interest rates, "it is indisputable that the opportunities for investment would absorb large amounts of capital with only a gradual lowering of the rate of return."¹ The demand (and not the supply) depends on the cost of production of new capital goods, and the "price," the rate of interest, is demand-determined, as in all cases of infinitely inelastic supply.

On the other hand, one can treat the commodity as "future income," supplied through the production of income-yielding goods. Now the supply is indefinitely elastic-- "the virtually unlimited possibility of using more capital in production means that future incomes can be provided in correspondingly large volume at slowly increasing cost."² It is the demand that is inelastic. This corresponds to the Marshallian long-run situation, where demand has no effect on the price.

Savings is a flow, properly measured as so much per time unit. But what is demanded and supplied in the capital market is the total stock of wealth. A demand curve cannot be drawn on the same diagram with a curve showing the rate of increase in supply. The ordinary demand-supply analysis, properly applied to an equilibrium between two flows, is inappropriate for an "accumulating good" like capital .

1 ibid., p. 262

2 ibid.

* * * * *

Knight refers to his theory as a marginal productivity theory.¹ But this designation requires qualification. It is not true that the interest rate in Knight's system is equal to the marginal productivity of capital in the same sense that the wage of a homogeneous class of workers is equal to the marginal product of labor. This is because capital, in Knight's system, has no physical existence. In order to determine the marginal product of a productive resource, we must be able to increase the physical quantity of the resource by a small amount and observe the effect on the product. There are no units for measuring a heterogeneous collection of tangible and intangible assets, and no reason to suppose such a catch-all subject to diminishing physical returns. The law of diminishing returns is a technological law. It states a relationship between measurable physical magnitudes. If the variables cannot be identified and measured in homogeneous physical units, the law cannot be applied.

Formally, Knight's rate of yield on real investment (which is equal to the rate of interest) is the same as Irving Fisher's rate of return over cost or Keynes's marginal efficiency of capital.² It is that rate of discount

1 "Capital and Interest," op.cit., p. 397

2 Schumpeter quotes Abba P. Lerner as taking the position that the Keynes and Fisher concepts are not the same. History of Economic Analysis, p. 1178. They are alike, however, in expressing the increment in return in ratio to a flow instead of a stock.

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which would make prospective receipts equal to costs. But, in the Fisher and Keynes applications of this concept, the result is a downward sloping investment demand schedule, relating the rate of return to the scale of investment. One such schedule is applicable to each investor, and these can be aggregated into an investment demand schedule for the market. These schedules do not correspond to anything that can be designated "the" interest rate. In order to determine the rate of interest, we must have further information. In Fisher's system, this is given by the supply curve of savings, which shows savings as an increasing function of the rate of interest. The intersection of the two curves gives the unique equilibrium rate. In Keynes's system, the rate of interest is determined in the money market, by the schedule of liquidity-preference and the stock of money to hold for speculative and precautionary balances. The rate of interest, together with the investment demand schedule, determines the scale of investment.

Both the Fisher and Keynes theoretical constructions are fitted by these theorists into a total system which takes the form of Marshallian short period flow equilibrium.¹ In this the stock of durable equipment is taken as given. So the increment of new equipment due to current investment must be regarded as small in comparison with the given stock. Investment takes the form of directing the variable inputs,

¹ A. C. Pigou, Employment and Equilibrium, Part II, Ch. 1

labor and raw materials, into the production of equipment. The downward sloping demand curve for funds for investment is due to two factors. First, increases in the variable inputs in the investment goods industries are subject to diminishing returns; the scale of investment can be increased only with falling interest rates. This implies quasi-rents on durable equipment in excess of the rate of return on new equipment. (Alternatively, if these quasi-rents are capitalized at the going interest rate, asset value will exceed cost.) Second, new investment may take the form of installing less profitable equipment, some equipment would be earning a quasi-rent in excess of the rate of return on new investment. This is equivalent to a disequilibrium in the stock of capital. Full long period equilibrium requires that the stock of capital be so allocated as to equalize the rates of return. Marshallian short period equilibrium can be defined as a situation which falls short of full static equilibrium because of a disequilibrium in the allocation of capital.

Knight, having rejected time preference, and having no affinity for monetary interest theories, does not have a Fisher type supply schedule, or an independently determined Keynesian monetary interest rate. He therefore can have no investment demand schedule. His way out of the difficulty

is to confine the discussion to conditions corresponding to full, long period equilibrium, when the stock of capital is optimally allocated, and there is only one maximized rate of return. In Knight's system, when the rate of interest is determinate, there are no resources which earn quasi-rents.

The rate of yield on real investment depends on the cost of production of new income yielding goods. But there is a difficulty involved in this, because the cost of production depends in part on the rate of interest.¹ The resolution of the difficulty depends on the assumption that the economic system is in full static equilibrium--more specifically, that there is perfect competition and perfect mobility, divisibility and adaptability of all resources, so that production takes place under conditions of constant cost. Then there is only one rate of interest and it can be determined by the condition that the rate of discount used in accumulating the cost of an income yielding asset must equal the rate of return on the asset. (The "economic principle" requires that these be equal.) An equation expressing the equality of the rate of yield and the rate

¹ There is a vicious circle problem involved. Capital is usually defined as income capitalized at some rate of discount. But the rate of interest expresses income as a ratio to a principal amount. The psychological time preference theorists recommended their theory on the ground that it enabled one to break out of this circle. See Risk, Uncertainty and Profit, ftn., p. 167 and "The Quantity of Capital and the Rate of Interest," Journal of Political Economy (1936)

of discount can be solved for the rate of interest.¹

An alternative way of looking at the determination of the rate of interest in a Knightian world is like this. Consider the case of a rational investor contemplating sacrificing present for future income. He wishes to maximize his return on the investment, but the return that he can realize depends upon the size of the amortization quotas he must set up in order to replace the asset at the end of its service life. And the size of these quotas depends on the rate of interest at which they are invested. Now the rate of interest at which these quotas are invested cannot exceed the rate of return on the productive asset, else the investment in the asset would never be undertaken. Nor can it fall short of the rate of return on the asset, for the investor always has the option of investment at the most

1 An investor sacrifices S dollars at the end of each year for t years. At the present time, year 0, the total cost C of his investment can be expressed: $S + S(1 + r) + S(1 + r)^2 + \dots + S(1 + r)^t = C$, where r is the rate of interest, or

$$(1) \quad C = S \sum_{i=0}^t (1 + r)^i \quad (i = 0, 1, 2, \dots, t)$$

The investment will yield R dollars per year, at the end of each year, for n years. The value can be expressed at year 0 as

$$(2) \quad V = \sum_{j=1}^n \left[\frac{R}{(1 + r)^j} \right] \quad (j = 1, 2, \dots, n)$$

In equilibrium C must equal V , so the two expressions can be equated and solved for the rate of interest, r .

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 profitable rate. So the rate of yield on the investment can be uniquely determined, if we know the cost outlays over a period of time, and the prospective receipts over a period of time.¹

The ability to determine the rate of interest in this way is dependent upon all the conditions of perfect competition, including constant costs and static interest expectations, for, without these conditions, the return on the amortization quotas need not equal the return on the investment.

In connection with his criticism of capital theory, Knight came to restate the marginal productivity theory as part of a theory of the capitalization of assets. The economic problem is essentially that of determining the "quantity of capital," a value aggregate, from the knowledge of prospective income streams, together with the rate of interest--the latter a datum, in Knight's system, determined

1 Suppose for simplicity that an asset is purchased for one lump sum payment of S dollars, and is expected to yield a gross rental of R dollars per year for n years, then become worthless. The investor sets aside an annual amount A to amortize the value S of the investment. The amount of this annual amortization quota depends on r , the rate of interest: $A + A(1+r) + A(1+r)^2 + \dots + A(1+r)^n = S$, or

$$(1) \quad A \sum_{i=0}^n (1+r)^i = S \quad (i = 0, 1, 2, \dots, n)$$

or

$$A = \frac{S}{\sum_{i=0}^n (1+r)^i}$$

We also have

$$(2) \quad r = \frac{R - A}{S}$$

There are two equations to determine the two unknowns, A and r .

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by technological conditions at the margin of production. The crucial analytic distinction is between current asset values and future income, and this is believed to eliminate once for all the classic tripartite division, because all resources are rendered homogeneous, in value terms, through their contribution to production. There is no economically relevant system of classification for separating one "factor" from another. "The plain fact is that all economic values in the world have been produced in the past, in the economic sense, and at equal cost for equal values except for errors in foresight or calculation."¹

We are urged to look on the economic system as a complex of diverse productive agencies. All of these are capital, a "homogeneous fund of values," which maintains itself and gives off a flow of service available for consumption or further investment. Like light, but not like water, the stream of service flows, for it has no existence save as a flow of value. "Water exists, and can be measured, apart from any flow in time; but with light and services this is not true."²

Knight's version of the marginal productivity theory of distribution is neatly presented in his "Crusonia" model.³

1 Risk, Uncertainty and Profit, preface, p. xliii

2 "The Ricardian Theory," op.cit., p. 43

3 "Diminishing Returns from Investment," Journal of Political Economy (1944)

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Crusonia is a mythical island where the citizenry live on the natural growth of a perennial plant. The plant grows at a constant geometric rate, save as the tissue is cut away for consumption. There is only one type of resource--the plant--and one type of income, which is the same as the resource. Here the rate of interest is simply the growth rate of the plant, assuming that none of the growth is cut away. (Crusonia is substituted for Crusoe in order to take care of a problem about capital accumulation to which Knight has frequently called attention, the fact that accumulation looks beyond the lifetime of present day savers, and so is not, in Knight's view, discussable in terms of a purely individualistic model.)

In Crusonia, the economic problem has been reduced to an act of valuation. There is no effort involved in economic activity, there are no technological problems in production. The "essence" of economic life is distilled in the procedure of determining the quantity of capital by discounting a prospective income stream.

(d) "real" and "monetary" interest theories

The two leading theorists of enterprise, Schumpeter and Knight, have different ideas about the nature of capital. They and their followers have debated such questions as whether the rate of interest can have a value of zero, and whether it is a "real" or a "monetary" phenomenon. We shall briefly consider Knight's criticisms of Schumpeter, and then indicate how these criticisms point up some difficulties in Knight's own views.

The two theorists agree in their rejection of time-preference or impatience as a determinant of the rate of interest, in opposition to widely held views among orthodox economists at the turn of the century.¹ For Schumpeter, this means that his stationary circular flow (Kreislauf) cannot come into existence until interest is zero. The Schumpeterian stationary state is in essence a Böhm-Bawerkian period of production model, of the type Knight has attacked so vigorously, but with the period of production lengthened until the marginal product of "waiting" has become zero.² Since time-preference is not an independent causal factor, competition acts to eliminate all surpluses

1 "The assumption of a general preference in human nature for present over future goods is so commonly and confidently made that some courage is required to call in question the foundation of the entire body of doctrine on the subject; yet it must be done." Risk, Uncertainty and Profit, pp. 130-1. Cf. Schumpeter, Theory of Economic Development, pp. 37 & ff.

2 Schumpeter, op.cit., Ch. V, pp. 158-9

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over present costs, the latter being exclusively for the services of land and labor. " . . . there are no people with any claims upon the product except those who perform some kind of labor or place the services of land at the disposal of production."¹

To recur to the terminology used above, interest belongs with the residual categories identified by contrast with the ideal type. "The 'static' economy knows no productive interest,"² the interest rate exists only in the disequilibrium of economic development. This is Schumpeter's way of saying that capital and interest are institutional, that is, not explicable solely in terms of the general properties of rational choice, "in a communist or non-exchange society . . . there would be no interest."³ Moreover, interest "attaches to money not to goods."⁴ "Capital . . . is not goods but balances, not a factor of production . . . It can be created by banks because balances can . . . Its market is simply the money market, and there is no other capital market."⁵

Schumpeter's approach involves the application of marginal productivity analysis exclusively to labor and land.

1 ibid., pp. 44-5
2 ibid., p. 158
3 ibid., p. 176
4 ibid., p. 158
5 Business Cycles, I, p. 129

In this way, he outflanks a number of perplexing conceptual problems about the measurement of capital.

The character of these difficulties can be seen by reflecting on the nature of the marginal productivity theory. It is a generalization of the Ricardian law of rent. In Ricardo's theory, the land is fixed and given. As the employment of the variable input labor (really, labor-and-capital used in fixed proportions), is increased, the "marginal product" (as we now say) of this composite input falls. Since all the units of the variable input receive the same return, determined at the margin of production, land receives a surplus, "rent," equal to the difference between the average and marginal product on the intra-marginal units. The marginalists of the later nineteenth century, such as J. B. Clark, regarded their demonstration of the reversibility of this process as an important part of their presentations of the marginal productivity theory. If labor were in fixed supply, and land in variable supply, then labor would earn "rent." Moreover, the rent on the fixed input can be shown to be the marginal product of this input. It can be indifferently regarded as a residual or as a directly determined return. If the supplies of all the factors are given, then the product will be shared among them on terms governed by their marginal contributions.

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The marginal productivity theory is a theory of factor demand, worked out on the assumption of given supplies of factors.¹

In order to generalize the Ricardian rent theory in this way, it is necessary to assume that inputs can be placed in a finite number of classes, with the members of each class measurable in homogeneous physical units. The law of diminishing returns, which underlies the tendency toward diminishing incremental products, is a technological law. In order to calculate the marginal product of an input, we must be able to increase its employment by a small amount, leaving all other factors constant, and observe the change in the product. This calculation cannot be made unless the inputs have the required property of substitutability. Some inputs must be divisible, mobile and adaptable.

The extent of substitutability depends on the specificity with which we define each class of input. If inputs are measured in the unique forms in which they stand at a moment--this truck, that diesel engine, this stenographer, that mimeograph machine--the degree of substitutability approaches the vanishing point. The requisite divisibility and adaptability entails broadly defined classes. We must find some way of allowing the forms of inputs to vary without altering their amount.² Then we can observe the effect on a well

¹ J. B. Clark, The Distribution of Wealth, Ch. 13

² D. H. Robertson, "Wage Grumbles," reprinted in American Economic Association, Readings in the Theory of Income Distribution

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defined product of an increment of divisible input, all others being held constant. Under the assumptions appropriate to perfect competition, we can convert this physical product into its value equivalent. Then we can show that, in perfect equilibrium of perfect competition, each input receives the value of its marginal product.

But when we have moved up to this level of abstraction, what are the physical units in which we reckon? Unless we confine the discussion to a situation in which labor and land, both regarded as homogeneous, are the only inputs, and "corn" the only output, the marginal productivity theory runs into grave conceptual difficulties.

It was Wicksell's belief that, unless all inputs could be reduced to that status of "original factors," the marginal productivity theory was inapplicable. "Whereas labour and land are measured each in terms of its own technical unit (e.g., working days or months, acre per annum) capital . . . is reckoned . . . as a sum of exchange value. This is a theoretical anomaly which disturbs the correspondence which would otherwise exist between all the factors of production." If capital could be measured in its own technical unit, it could be treated symmetrically with labor and land, but "in that case, productive capital would have to be distributed into as many categories as there are kinds of tools . . . and even then we should only know the yield of the various objects . . . but nothing at all about the

value of the goods themselves, which it is necessary to know in order to calculate the rate of interest, which in equilibrium is the same on all capital." We can only escape from this difficulty if we note that "all capital goods, however different they may appear, can always be ultimately resolved into labour and land . . . We may thus regard capital as a single coherent mass of saved-up labour and saved-up land."¹

Wicksell was not unaware of the logical difficulties involved in the idea of a period of production. He anticipated a number of Knight's criticisms. He notes that the average investment period of labor and land will be independent of the rate of interest only in the simple "point input-point output" case. If the inputs have a time dimension, and the output is a durable good, then changes in the rate of interest will affect the average period of pro-²duction, so the latter does not determine the former.

But one of Knight's principal missions as an economic theorist has been to get rid of the notion of a factor of production.³ He believes that the Böhm-Bawerk-Wicksell theory, as well as Schumpeter's circular flow, retain a commitment to classical ideas, because of the role played by "original factors." Instead of following Schumpeter's example, and effecting the reduction of capital goods into "original factors," labor and land, he proposes to move the

1 Lectures I, pp. 149-50

2 ibid., p. 260

3 See the debate with N. Kaldor in Econometrica in 1937, following the publication of Kaldor's essay on the period of production controversy.

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other way. "At the growing point or margin natural resources analyze into two elements, a cost of discovery, which is essentially the 'production of knowledge', . . . and a cost of development, which is the same as any other investment of capital in the production of things under known conditions."¹

Since there are no "original factors," nothing is "given" to the economic system, "all human capacity is socially and artificially created . . . "² Therefore, the rate of interest--the yield on investment--can never fall to zero until "all goods become free." A tendency for some types of assets to rise in value because of increasing scarcity relative to increasing supplies of other assets will simply cause a redirection of the flow of investment. If types of land and labor rise in value with the construction of factories and equipment, then investment will be directed into education, exploration, irrigation. With no resources in fixed supply there can be no long-run tendency toward diminishing returns to investment. In the short-run, there may be diminishing returns because "there are factors in the investment situation, given by nature and economically unalterable, which prevent completely free and uniform growth in all fields."³ Still, Knight believes that, since investment is future oriented, it is most reasonably regarded

1 "Statics and Dynamics," Ethics of Competition, p. 182

2 "The Ricardian Theory," op.cit., p. 56

3 "Capital and Interest," op.cit., p. 401

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as exploratory in character, directed toward increasing knowledge rather than "things." The new knowledge is likely to raise the productivity of capital more rapidly than the multiplication of "things" lowers it, so there need be no tendency toward diminishing returns, even in the short-run. He states the opinion that "the only form of investment which has finally yielded any real return, to society or to the average individual, is the growth of knowledge, that the multiplication of things has not, on the whole, been profitable."¹

But what becomes of the marginal productivity theory under these conditions? In his zeal to get rid of the notion of a factor of production, he has threatened the marginal productivity theory itself.² He denies that one can classify inputs into physically defined classes, each measurable in homogeneous units. For inputs, "homogeneity and distinctiveness of classes and other qualities are questions of brute fact, and the predominant fact is specialization, complementarity, and immobility, in almost infinite variety." The problem is one of the degree of mobility or "fluidity of capital between different forms of investment." But mobility is not a matter of the physical characteristics of an individual agency but of "an interrelated complex in space and time" and none of these elements "can be measured at all definitely, for there is no economic magnitude available as

¹ "Diminishing Returns to Investment," Journal of Political Economy (1944), p. 41

² This was evidently the principal point Kaldor wished to make in his 1937 debate with Knight. See op.cit.

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a standard which is not changed by any shift in productive organization."¹ One might attempt to measure capital in terms of numbers of machines, but investment in machinery would change the nature of a machine.

Moreover, as we have seen, wealth does not consist of "things," but of values, and the most valuable component is knowledge.

New investment is made, put into, not only "capital-goods" (in the sense of goods in process, machines, etc.), natural agents and human beings, but also technology and scientific research, and social monuments and works of art; and the costs, or the investment itself, include the services of all those agents. In a pecuniary society the rate of return, so determined and defined, also fixes the "natural" rate of interest on loans. It should be noted that all yields and the form of value of all agents depend on the immaterial aspects of a culture or civilisation, and that practically everything that is human, except the anatomy and physiology of biological man (and some even of that) is like capital, a cumulative historical creation.²

Knight even speaks of the creation of new consumer wants as capital formation.³ Does the marginal productivity theory retain its validity under these conditions?

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The theorist whose analysis of capital has most in common with that of Knight is--curiously enough--Veblen. Veblen anticipated Knight's doctrine that there are no resources--human or non-human--"given" to the economic system, logically

¹ "The Ricardian Theory," op.cit., pp. 56-7

² Risk, Uncertainty and Profit, preface (1948), p. xlv

³ "Diminishing Returns to Investment," op.cit.

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prior to human attitudes or interests, as represented by "knowledge, usage, habits of life and habits of thought."¹ What gives material assets their value comes from "immaterial, spiritual" factors operating within the community's experience.

There is, of course, no call to understate the importance of material goods or of manual labor. The goods . . . are the products of trained labor working on the available materials; but the labor has to be trained, in the large sense, in order to be labor, and the materials have to be available in order to be materials of industry. And both the trained efficiency of the labor and the availability of the material objects are a function of the "state of the industrial arts."²

Weblen makes the point Knight wishes to stress when he writes: "Labor is no more possible, as a fact of industry, without the community's accumulated technological knowledge than is the use of 'productive goods'.³" Knight's argument that "all yields," the productivity of resources, depend on "the immaterial aspects of a culture or civilisation" is intended to provide a final refutation of the labor theory of value. To attempt to trace the productivity of resources to the pain of labor is to try to explain it as attributable to presocial human effort. But having effected this final demolition of the labor theory of value, by pointing out the social context of economic value, Knight goes on to argue that the highest wisdom about capital and interest comes from reflecting on the situation of Crusoe, the "individualist individual."

1 "On the Nature of Capital," The Place of Science in Modern Civilisation, p. 325

2 ibid., p. 349

3 "Professor Clark's Economics," op.cit., p. 200

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On the other hand, it is just this view of economic explanation that Veblen meant to attack with his analysis of the nature of capital. Capital and interest were unheard of before a late stage in the evolution of institutions. An attempt to explain them in terms of primordial rationality is like the effort of a philologist "who should endeavor to reduce the Homeric hymns to terms of those onomatopoetic sounds out of which it is presumed that human speech has grown."¹

The economic life of a community is based on a shared body of technological knowledge. This body of knowledge "may be called the immaterial equipment . . . and in the early days at least, this is far and away the most important and consequential category of the community's assets or equipment. Without access to such a common stock of immaterial equipment no individual and no fraction of the community can make a living, much less make an advance."²

In the early stages of economic development, the material equipment required to utilize the technology is slight and inconsequential. But as the technological knowledge grows more complex, the required material equipment grows greater, until it becomes greater than an unaided individual can provide. It is at this stage that the institutions of the

¹ "Fisher's Rate of Interest," Essays in Our Changing Order, p. 144

² "On the Nature of Capital," op.cit., pp. 325-6

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private property system take form. Men accumulate capital goods, and in this way, they engross a large share of the fruits of the community's immaterial knowledge. "The commonplace knowledge of ways and means, the accumulated experience of mankind, is still transmitted in and by the body of the community at large; but, for practical purposes, the advanced 'state of the industrial arts' has enabled the owners of goods to corner the wisdom of the ancients and the accumulated experience of the race."¹

The rate of interest comes into the awareness of mankind after the full development of this system of private property. "The whole matter lies within the range of a definite institutional situation which is to be found only during a relatively brief phase of civilisation that has been preceded by thousands of years of cultural growth during which the existence of such a thing as interest was never suspected"² Interest is a "phenomenon of credit transactions alone." It comes into existence with the lending and borrowing of money that go along with investment.

Methodological individualists such as hedonists who are consistent with their premises must deny that capital and interest are monetary phenomena. Their analytical technique consists in passing from the individual economizer to the

1 "Professor Clark's Economics," op.cit., p. 186

2 "Fisher's Rate of Interest," op.cit., p. 142

economic system by means of a simple summation. They cannot accept as ultimate independent elements any concepts such as money or credit that cannot be identified with the economy of an isolated individual. This is also true of intangible assets like "good will" which correspond to capitalized monopoly power. Such assets must be explained away by the hedonist because they represent a differential advantage for one individual as compared with another. They cannot enter into an aggregation of the wealth of the community. The only authentic hedonist conception of capital is that of a "congeries of productive goods."

But Veblen believed that the authentic hedonist concept was so badly out of touch with current affairs that there had been a movement to replace it with a more serviceable idea. He took Irving Fisher's interpretation of capital as discounted income to be the substitution of a "pecuniary for a hedonist construction of the phenomenon of capitalization." But Fisher remained loyal to the individualist principle that the "capital value" for the society was derived by simple summation from individual capitals. This required lengthy argument to show how capital value could be resolved into the value of a "congeries of tangible assets."¹

Veblen's criticism was directed at the logical difficulties involved in passing from "capital value" to objects of tangible wealth, a transition that was required "for the purposes of a taxonomy such as Mr. Fisher's, which seeks to set up mutually exclusive categories of things distinguished from one another

¹ ibid., p. 162

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 by statistically determined lines of demarcation." For these purposes, it seemed advisable to "hold fast to the received dogma, however unworkable, that 'capital' is a congeries of physical objects with no ramifications or complications of an immaterial kind . . . "

Knight's capital, like Fisher's, is a "fund of values," determined by discounting the prospective yields of assets. However, Knight makes no effort to solve Fisher's problem, that of resolving this value aggregate into tangible items of wealth, though this resolution is required if he is to put resources into classes and apply marginal productivity analysis. On the contrary, the state of technology, the "immaterial equipment" which, for Veblen, forms the context in which material goods become capital, is, for Knight, the principal ingredient in capital itself. The question Veblen raised about the taxonomic value of Fisher's concept comes up even more urgently with Knight's.

Knight's reasoning is that we do not verify the marginal productivity theory by relating the various theoretical concepts to observable aspects of the economic system. There are no units for measuring the "perpetual service income" which is the "primary magnitude in economic analysis." Nor can we quantify the various inputs in physical units, as is necessary if we are to apply marginal productivity analysis directly, "a quantity of labor has meaning only in terms of

1 "Professor Clark's Economics," op.cit., p. 201

value . . . " ¹ The empirical status of the theory depends on our ability to confirm through introspective insight the economic principle, "that maximum return from any resource is obtained by equalizing the increments of the resource in all the alternative modes of use . . . " ² When we recognize this as the causal factor operating in free economic organization, "it becomes truistical to remark that the distribution of the product . . . is on the basis of increments of yield." ³

The objection to this procedure can be presented in an argument identical with the one Knight uses to disqualify "hedonism or any purely individualistic conception of motive or interest" to serve as the basis of an ethical system. Such a procedure "lands one in solipsism," while the ethical problem concerns man as a social being, participating in the discussion of value conflicts. ⁴ If ethical questions cannot be discussed individualistically, then how can the problems of the growth of scientific knowledge and the development of technology be illuminated by considering Crusoe's situation? How can a process both social and dynamic be fitted into an analytical framework both individualistic and static?

1 "The Ricardian Theory," op.cit., p. 56

2 ibid., p. 38

3 ibid., p. 62

4 "Ethics and Economic Reform," in Freedom and Reform, p. 78

* * * * *

So it is that Knight, in his criticism of Schumpeter, seems to stand with one foot in each of two contradictory worlds, that of Veblenian institutionalism and Austrian methodological individualism. He rejects Schumpeter's method of resolving the produced means of production into land and labor on Veblenian grounds that there are no original factors "given" to the economic system. All resources acquire their significance as productive assets in a social or cultural context.

But he opposes Schumpeter's monetary interest theory on Austrian value theory grounds. "One main reason for stressing the Crusoe economy is to get rid of the notion . . . that the rate of interest is a monetary phenomenon . . . a Crusoe economy would obviously have no place for lending money or for money itself." Yet in order to act rationally, "a Crusoe or any economizing subject would have to know the rate of return on investment in every type of resource . . . Reflection on the Crusoe situation should make it clear that a purely monetary theory of interest is simply nonsense."¹ Only on Crusoe's isle is the "nature" or "essence" of capital revealed. For that revelation we must "get rid by abstraction of all the social relations, mutual persuasion, personal antipathies, and consciously competitive or cooperative relationships which keep the behavior of an individual from being . . .

1 Intelligence and Democratic Action, p. 81

economically rational."¹

An explanation for this paradox is suggested by considering the purpose of Knight's theoretical analysis. It is difficult to understand him as an economic theorist unless one takes account of the fact that he is also a moralist. We shall conclude with a brief discussion of the ethical implications of his distribution theory.

1 ibid., p. 76

(4) The Ethics of Income Distribution

It can be cogently argued that the principal application of Knight's theories of profit and interest is to the discussion of problems of distributive justice. Yet there are some perplexities about this aspect of his analysis.

In his early expositions of the principles of marginal productivity, he is insistent on the ethical neutrality of the analysis. John Bates Clark, "the leading American exponent of the theory," is charged with failing to separate the factual analysis from "sweeping moral and social dogmas" with resulting confusion in economic thought.¹

However, in later writings, Knight has conceded that his kind of "functional description" inevitably gives an impression of apologetics rather than of pure analysis. "In dealing with phenomena of life . . . description must run largely in functional terms of how the organic process is kept going . . . But functional explanation smacks of justification or apologetic."² Knight's theory of distribution explains the rewards to the income recipients on the basis of the functions they perform in keeping the economic system in operation. The analysis is an example of what Veblen called "economic taxonomy," a system of definition and classification.

1 Risk, Uncertainty and Profit, p. 109

2 "Economics, Political Science and Education" (1944), reprinted in Freedom and Reform, p. 327

One defines such economic concepts as capital and enterprise by considering their function in an ideal economic situation, such as the Crusoe economy.

The question is, whether all "functional description" which explains by reduction to the properties of a primordial rationality is not inevitably moral in its significance. This was Dewey's position. He claimed that "reference to components of human nature, even if they actually exist, explains no social occurrence whatever . . . Whenever such reference occurs it has moral. . . significance . . ." ¹ This is because "any movement purporting to discover the psychological causes and sources of social phenomena is in fact a reverse movement, in which current social tendencies are read back into the structure of human nature; and are then used to explain the very things from which they are deduced." ² On this view, methodological individualism of the Knightian type has primarily ethical rather than factual significance. This does not mean that the theory is false, but that it is only placed in its proper context, subject to intelligent criticism, when one takes its moral character into account.

1 Freedom and Culture, p. 113

2 ibid., p. 108. Dewey acknowledged a debt to Wesley Mitchell for his interpretation of the hedonist calculus as a representation of primordial human nature in terms of business accounting. Human Nature and Conduct, ftn., p. 213.

In appraising the actual distribution of income under "free contract," Knight begins with the case of Crusoe. Crusoe allocates his "resources," his personal powers, knowledge, skill, technique, and his natural and artificial external means, in such a way that the product increments of each kind of resource have equal value in all uses. When he reaches this position, he has maximized the product in value terms. Any movement of a resource from one employment to another would cause uncompensated losses, that is, it would reduce the value of the total product.

We then turn to the association of independent individuals in an enterprise economy. "Everyone is free, as a Crusoe is free, and also enjoys the nearly boundless gain in the effectiveness of action possible through organization . . . Distribution, what the individual (family unit) gets out of it all, is also in principle the same as with a Crusoe; it is what he produces."¹

In more recent writings, Knight does not argue that this value equivalence between produce and income is without ethical significance. "This principle is 'just' in a kind of natural sense, and in the most primitive meaning of the term in human society."² "Effective market competition does

1 "The Role of Principles" (1950), in *History and Method*, p. 258

2 The Economic Order and Religion (1945), p. 108

eliminate arbitrary power, promote freedom and efficiency, put consumers as a body in control of production and distribute burdens and benefits in a way which conforms to one form of individualistic justice (The New Testament--the Apostle Paul speaking--asserts that a man should reap what he sows)."¹

The situation is "just" in this "primitive" sense, but it represents only a relative ideal, because it takes the individual with his tastes and his endowment of economic power as "given." Taking individuals as they are, it allows the most effective use of their capacities on the basis of free choice. But for purposes of asserting an absolute ideal, it is illegitimate to take the individual as given. The ethical problem does not consist solely of concern about right relations between given individuals, it must also consider the problem of right individuals. And the individual is largely created by the social system of which he is a part.

For the "absolute" ethical judgment, we must consider the institutional structure that makes the individual what he is. Knight does not pretend that this structure is ideal. on the contrary, he asserts that it is not. Nevertheless, he believes that reforms aimed at securing some higher form of justice than the "natural" justice of the free market are likely to destroy the latter without providing the former.

¹ ibid., p. 245

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"Whether the human race is capable of establishing order on a principle which does not expressly sanctify exploitation remains for the remote future to determine."¹ Yet before we can eliminate exploitation, we must be able to define it. "While criticism of the enterprise economy has usually run in terms of injustice, critics have rarely tried to formulate any explicit norm of distributive justice to be applied in place of the market norm."²

One cannot mark out broad classes of income recipients and claim that some are rewarded for "productive" contributions and others for "unproductive" or exploitative ones, a procedure Knight believes was implied by the classical tripartite division of factors. Therefore his special concern to eliminate this approach to income distribution from economic analysis. Even Knight's attack on the Böhm-Bawerkian theory of capital is due to his conviction that any theory which makes a fundamental distinction between the character of the service for which the laborer and the capitalist are rewarded ("work" and "waiting") retains some commitment to the "classical heresy," the labor theory of value.

Each individual comes to the free market with whatever productive capacity he happens to have. This capacity falls into two divisions: the physical and mental endowment of the individual himself, and the productive power embodied in the

1 "Freedom as Fact and Criterion," (1929), reprinted in Freedom and Reform, p. 9

2 The Economic Order and Religion, p. 108

external things owned by the individual. It is an error to make a sharp contrast on an ethical basis between the two kinds of capacity. The individual acquires whatever capacity he has through a combination of inheritance, effort and luck. All of it is built up through a social-cultural process that centers in the family as an institution. Why is inheriting a piece of valuable land so different from inheriting skill at playing the piano?¹

The central position of value and distribution theory in Knight's economics is related to his opinion that critical social problems involve conflict between group interests. It is these group conflicts which are settled in free society by social discussion, the resolution of value problems. A true social problem always centers in these conflicts. If there is no such disagreement then the problem is merely a technical, as opposed to a social one.

"The conflicts which seem most important as a concrete source of discontent and a threat to peace and order in modern society are those which center in economic interests, and specifically in economic relationships regarded as unjust or ethically wrong."² Traditionally, there has been the workingman's sense of injustice regarding his share in the social product--the "poor laborer" versus the "rich capitalist."

1 "Ethics and Economic Reform," Freedom and Reform, p. 71-2

2 The Economic Order and Religion, p. 97

Reformers continue to urge the promotion of "human rights" above "property rights."¹ Knight's discussion of socialism is mainly devoted to this question of distributive justice. He examines its alleged claim to provide a fairer distribution of income, though many socialists, including Marx and Engels, have not based their case against capitalism primarily on claims of distributive inequity.²

Though Knight was severe in his judgment of J. B. Clark's "naive productivity ethics,"³ it seems that his mature view is not strikingly different from that of Clark, particularly if one is prepared to read Clark with some generosity. Clark does not claim that distribution in accordance with marginal productivity principles is--to use Knight's terminology--absolutely ideal. His claim is that such a distribution would represent an ideal only in accordance with "the principle on which property is supposed to rest."⁴ He states this law as "to each what he creates." Knight would not approve of the verb "create" in this expression, though what Clark means is surely close to Knight's "as you sow, so shall you reap." However, Clark considers the possibility of alternative principles, such as "work according to ability and pay according to need," and says that, though this would

1 "The Planful Act" (1944), in Freedom and Reform, p. 362

2 "Socialism: the Nature of the Problem" in Freedom and Reform; see also Karl Marx, "Critique of the Gotha Program," in Lewis S. Feuer (ed) Marx and Engels: Basic Writings on Politics and Philosophy

3 Risk, Uncertainty and Profit, p. 109

4 The Distribution of Wealth, p. 9

violate the rights of property, "the entire question whether this is just or not lies outside of our inquiry, for it is a matter of pure ethics."¹ It does not seem unreasonable to view Clark's opinion as the same as Knight's contention that reward in accordance with marginal productivity is "'just' in a kind of natural sense." Knight, of course, goes much further in qualifying this proposition and in emphasizing the importance of the qualifications.

We shall go on in the final chapter to a detailed discussion of Knight's views about the relationship of ethical to economic principles.

1 ibid., p. 8

FIVELIBERTARIAN ETHICS(1) The Judgment of Mechanical Efficiency

Knight speaks of "two kinds of significance" of economic principles. They explain "what does happen" and they provide guidance "for bringing about . . . what ought to happen. In the first role they assimilate to principles of science; in the second, they raise questions of political principle . . . and both economic and political principles are inseparable from ethics . . . This problem is complicated by the tangled relation between the two concerns, explanation and critical evaluation; for these are inseparable, yet finally contradictory."

We have already noted an ambiguity in Knight's discussion of the ethical implications of the marginal productivity theory of distribution. On the one hand, he insists on the separation of the theory from "moral and social dogmas which have been deduced from it."² On the other, distribution in accordance with marginal productivity principles is held to represent a "natural" justice "in the most primitive and universal meaning of the term in human society"³ -- "as you sow, so shall you reap" -- though it is granted that the problem of distributive justice

1 "The Role of Principles," (1950), History and Method, p. 257

2 Risk, Uncertainty and Profit, p. 109

3 The Economic Order and Religion, p. 109

"cannot be seriously discussed" without going beyond the "simple norm" of "exchange of equal values" to ethical principles which he claims cannot be derived from any factu-
¹
 al investigation.

This distinction between the "natural justice" of the market and "distributive justice" according to moral or religious principles corresponds to the two judgments which Knight says are involved in any appraisal of an economic system. One relates to the mechanical efficiency with which the system operates. The other relates to conformity with an ethical standard. By mechanical efficiency, Knight means the system's functioning in accordance with its own blueprint. What is it designed to accomplish, and how well does it realize this purpose? But a further judgment must be made about the purpose itself. This is the ethical judgment. "There is much confusion in the popular mind on this point: critics of the enterprise economy who do not have a fair understanding of how the machinery works cannot tell whether to criticize it because it doesn't work according to the theory or because it does. And the same dilemma arises if the critic does not know
²
 what are his ethical ideals."

The mechanical judgment of the enterprise system is concerned with an appraisal of the claim that, under conditions

1 ibid., p. 111

2 "Ethics and Economic Reform" (1939), reprinted in Freedom and Reform, p. 47

corresponding to the model of perfect competition, resources would be allocated so as to realize maximum efficiency with respect to given ends. As Knight puts it: ". . . a free competitive organization of society tends to place every productive resource in that position in the productive system where it can make the greatest possible addition to the total social dividend as measured in price terms."¹ This rule can be paraphrased by saying that the optimum allocation of productive resources is not achieved as long as it is possible, by shifting resources from one employment to another, to increase all the products, or increase some products while leaving the others constant.

The optimal character of perfect competition is effectively described in the proposition that any product will be produced if its value--as indicated by effective consumer demand--exceeds its cost, the latter representing alternative products foregone, that is, marginal opportunity cost. Each firm in a competitive system has a motive to maximize profit, to increase production as long as the addition to revenue due to the sale of one more unit exceeds the extra cost of producing that unit. If each firm produces only an insignificant fraction of industry supply, then it will regard both its purchases and its sales as having no effect on the market prices of either inputs or outputs. The price of a unit of produce will equal its extra or marginal revenue because it is not necessary to lower prices in order to ex-

¹ "The Ethics of Competition," (1923), reprinted in Ethics of Competition, p. 48

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pand output. The prices of the resources required to produce that output will be the marginal cost of that unit of output. Therefore, the value of the marginal product of a resource will equal the price of the resource. Since the price of the resource is governed by what it can produce elsewhere, the price of the product reflects its marginal opportunity cost.

However, monopoly will distort the optimum allocation of resources by increasing the price of a product above its marginal opportunity cost and reducing the output of that product. Then too little of the monopolized product will be produced, and too much of the other products, given full employment of all resources. So we can say that under perfect competition the value of the social product is maximized, at the competitively determined prices, which are indicators of opportunity costs.

In a situation corresponding to the equilibrium of perfect competition, the value of the marginal product of a divisible resource X in employment A will equal the value of its marginal product in an employment B. If the Industry A is monopolized, and output curtailed, the value of the marginal product in A will rise above the value of the marginal product in B. There are two consequences of this monopolization. One is that the monopolist will receive a return over cost. On the Knightian view that the economist-as-scientist can say nothing about distributive ethics, he must remain silent about this effect on the distribution of income. But the economist

can say that the economy has been put in a condition such that it is possible to make everyone better off. If the employment of X were increased in A so that the value of its marginal product were made equal to the value of its marginal product in B, then the monopoly tribute could be paid through a general tax levied on the citizenry, but there would, even after payment of the tax, remain an extra product to be divided.¹

In Risk, Uncertainty and Profit (Chapter VI), Knight accepted the Davenport thesis that monopoly is "productive" in the only meaning this word can have for the economist-as-scientist, "an arbitrary restriction is . . . causally equivalent to physical limitation."² (p. 183) The economist has no right to moralize about the reasons for this scarcity. " . . . when monopoly income is said to be 'diverted from its real producers', or is called 'exploitative', in the sense that it 'is not secured by the agent that creates it', the words 'create' and 'produce' are not used in their correct (causal)

¹ This proposition can be illustrated with the familiar Marshallian consumer surplus analysis. The consumer surplus is the total area under a demand curve. If a competitive industry is monopolized, prices are raised and output is reduced. The monopoly gain is represented by a rectangle with height corresponding to the increased price, and base the now reduced quantity sold. The loss in consumer surplus will be greater than this by an amount represented by a triangle with base equal to reduction in quantity sold, and height the increase in price. The citizenry would be better off if it were taxed an amount equal to the monopoly gain and the proceeds of this tax given to the monopolist, while price and output were restored to the competitive level.

² Cf. Davenport, Economics of Enterprise, Ch. IX, p. 127

meaning." (p. 189) On these grounds, he argues that the economist-as-scientist has no business condemning monopoly. Taken literally, this would mean that the idea of "mechanical efficiency" could have no legitimate economic meaning, for this implies an idea of "ideal output," which involves a distinction between "natural" and "contrived" scarcity. But it is not consistent with Knight's later views to say one is unable to make such/^a distinction. His position seems more correctly described in the previous paragraph. The economist-as-scientist cannot condemn the distributive effects of monopolization except on the basis of a specified ethical system. But he can condemn monopolistic restriction on grounds of the productive inefficiency associated with misallocation of resources.

Therefore the existence of monopoly elements, the presence of either buyers or sellers with monopoly power sufficient to control prices in their own benefit, will obstruct the tendency toward an optimum allocation of resources. So an appraisal of the extent and significance of monopoly belongs to the mechanical judgment. Also, fluctuations of prices and outputs during the course of the business cycle further obstruct the tendency toward maximum production of value, and the mechanical judgment must take these facts into account.

But there are further questions about the validity of price as a measure of value, even assuming all the conditions

of perfect competition. For the prices used to value the social output depend upon the distribution of income, which determines whose demands will be effective, and on the tastes of the public. Only if the distribution of income corresponds to some ideal standard of justice, and the public's tastes are regarded as beyond aesthetic or ethical reproach, could the economic situation resulting from even the most perfect competition be rated ideal. A full appraisal of the economic system requires the prior specification of an ethical standard. In fact, Knight argues "that the valid criticisms of the existing economic order relate to its value standards, and relatively much less to its efficiency in the creation of such values as it recognizes."¹

Thus, Knight's view, held subject to a few qualifications which will be noted, is that the actual enterprise system corresponds with reasonable approximation to the theoretical ideal, that it works "mechanically," but that it fails to correspond completely with any widely held ethical ideal.

* * * * *

The relationship between the two kinds of judgment is illustrated in the essay, "Fallacies in the Interpretation of Social Cost."² This is Knight's contribution to the debates of the early nineteen twenties about the laws of return. These grew out of A. C. Pigou's development of the Marshallian anal-

¹ "Ethics of Competition," op.cit., p. 43

² Quarterly Journal of Economics (1924), reprinted Ethics of Competition.

ysis of increasing and decreasing cost industries.¹ Professor F.D. Graham had applied the Marshall-Pigou analysis in an attempt to show that, if free trade caused a country to expand its increasing cost industries and contract its decreasing cost industries, it would suffer losses, in contradiction to the classical doctrine of comparative costs.²

Marshall had presented an analysis which purported to show that, if some industries were subject to increasing returns, or decreasing costs, so that their long-run or normal supply curves were downward sloping, then intervention by the state might increase public welfare. "When a commodity obeys the law of increasing return, an increase in its production beyond equilibrium point may cause the supply price to fall much; and though the demand price for the increased amount may be reduced even more, so that the production would result in some loss to the producers yet this loss may be very much less than the money value of the gain to purchasers . . ."³ Therefore if a tax were levied on industries subject to increasing costs, and a bounty paid to those with decreasing costs, there would be an increase in the aggregate of consumer satisfaction. The increasing cost industries would contract production and so lower the unit cost of production, so that the rise in price

¹ In Wealth and Welfare (1912) and The Economics of Welfare (First Ed., 1920)

² "The Theory of International Values Re-examined," Quarterly Journal of Economics (1923)

³ Principles of Economics, p. 472

to the public would be less than the tax. The decreasing cost industries would expand production, and also lower its cost of production, so the fall in price to the public would exceed the bounty paid from the proceeds of the tax.

Marshall believed that these considerations indicated that "the doctrine of maximum satisfaction," as presented in "abstract and trenchant form" in Bastiat's Economic Harmonics "is not universally true." (pp. 470-1) According to this doctrine, the free play of demand and supply, under conditions of laissez faire, leads to a social optimum, "that is, an increase in production beyond the equilibrium level would directly . . . diminish the aggregate satisfaction . . ." (p. 471) If an individual freely spends his income "on things which obey the law of diminishing return, he makes those things more difficult to be obtained by his neighbors, and thus lowers the real purchasing power of their incomes; while in so far as he spends it on things which obey the law of increasing return, he makes those things more easy of attainment to others, and thus increases the real purchasing power of their incomes." (pp. 474-5) It was this Marshallian idea which Pigou and Graham elaborated in their arguments that the invisible hand of competition would require assistance from the political state if the results were to correspond to a social optimum. This is an attack on what Knight calls the mechanical efficiency of the system. His essay aims to establish that the system cannot be success-

fully attacked along these lines.¹ If actual conditions corresponded to those of the model of perfect competition, the mechanical functioning of the system would be ideal. In order to show its defects one must bring in ethical considerations that take one outside economic science.

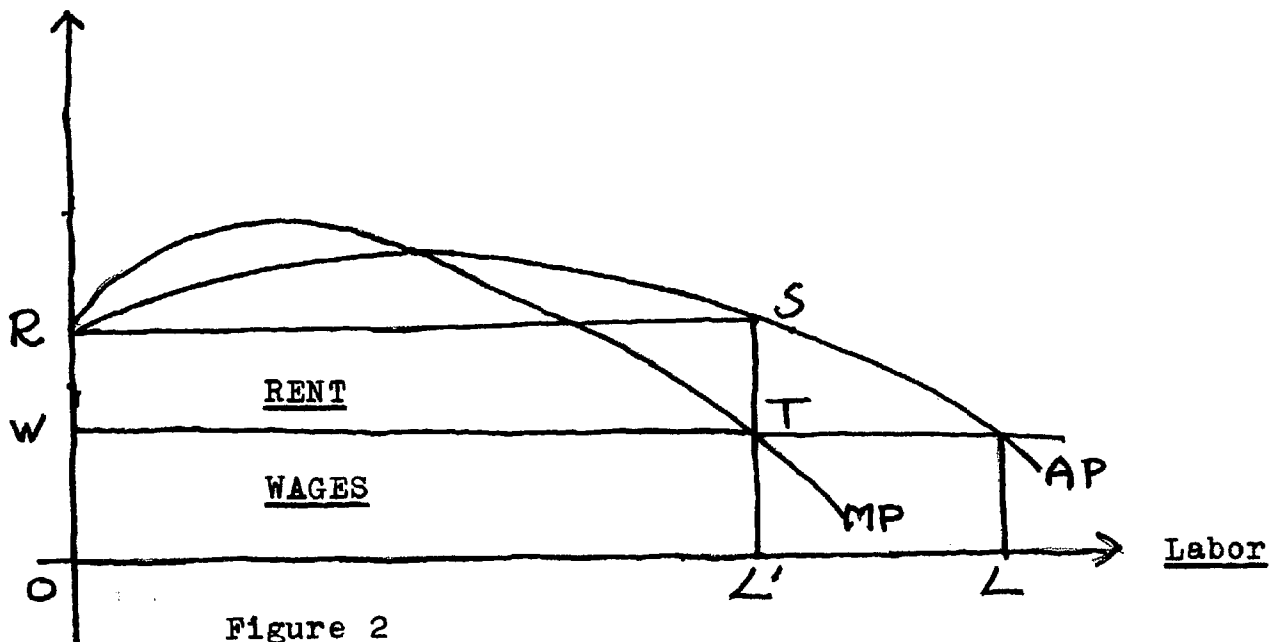
Knight develops his criticism with reference to an example of Pigou's about two highways. One of these roads is broad and capable of serving all traffic without crowding, but it is poorly graded and surfaced. The other is a much better road, but narrow. All trucks have an incentive to take the narrow road, and do so until it becomes sufficiently congested so that it is equally profitable to take the broad road. The congestion on the good road reduces the advantage of all the trucks on that road to the level of the trucks on the bad road. Pigou argued that the state could make a gain that would not be a loss to anyone by levying a tax on the trucks on the good road. Trucks would transfer to the broad road, and so increase the advantage of the narrow road an amount just equal to the tax. The transferred trucks would have lost nothing, so the return from the tax would be a clear gain. The example was supposed to illustrate how, in the absence of state action,

¹ Professor Allyn A. Young made a point similar to the one Knight makes in a review of Pigou's Wealth and Welfare Quarterly Journal of Economics, (1913). Knight mainly refers in his essay to the first edition of Pigou's The Economics of Welfare. (1920) See the essay, "Of Empty Economic Boxes," by J. H. Clapham, with a reply by Pigou and a rejoinder by Clapham, and the essay, "Those Empty Boxes," by D. H. Robertson, all originally published in the Economic Journal, 1920. These essays deal with the same question that concerns Knight in his essay.

self interest sometimes leads to poor results.

Knight's criticism can be presented by considering an example from primitive farming. It is assumed that a farmer owns a superior tract of land in an economy where there is ample inferior land available, so that cultivation yields constant returns. The wage rate for farm labor is set at the margin of production on the abundant inferior land, which yields no rent, and is equal to OW bushels of corn. (See Figure 2) Adapting Pigou's argument to this situation, it amounts to the assertion that OL workers would be employed on the superior land, where they would just earn their wages. However, it is clear that, by transferring a man from the superior to the inferior land there will be a gain. The transferred man will lose nothing, since he will earn the same wage on the inferior land. But the remaining workers on the superior land will produce a larger average product. In fact, it is possible to

Product (Bu. Corn)



gain from such transfers until employment on the better land has been reduced to OL' . As long as the marginal product of a worker is less than the wage, it will be worth-while to release him, even if the average product of all the workers on the superior land is greater than the wage. The total gain from such transfers is equal to $WRST$. Further transfers would reduce the total product on all the land, inferior and superior. The product from all the land is therefore maximized with just OL' workers on the superior land.

Under a system of private property the owner of the land would be able to charge rent in the amount $WRST$. The payment of rent, therefore, serves the function of securing just the correct allocation of farm workers between the two types of land. Equal wages are paid for equal work. Corn of the same grade commands the same price. The superior productivity of the scarce land is reflected in its rent.

If this were a socialist order, dedicated to the elimination of all payments to resources other than to labor, resources would be wasted. The good land would be over-utilized, and the poor land under-utilized. But if each worker were charged a fee for using the good land, competition among the workers would set the fee so that it yielded the state the same sum as the landlord receives under a system of private property. The correct allocation of workers is one that makes their marginal products equal. The payment of rent has the effect of limiting employment on the superior land so that this equality is realized. When production is carried into the stage

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of diminishing returns, then under a competitive regime of private property, individuals have an incentive to act so as to maximize the product.

Pigou's problem, of the overutilization of the narrow road, and the underutilization of the broad road, is a consequence of his using an example in which there is no private ownership of the productive resources. The example assumed away the essential feature of the system being criticized. If the two roads were privately owned, the owner of the superior road would be able to ask and to receive a toll which would be equal to Pigou's proposed tax. This would be just sufficient to insure optimum allocation of traffic between the two roads.

The pricing system, under competition, will allocate transferable resources among alternative uses so as to yield equal marginal value products. This is the condition for maximizing the product in value terms. Non-transferable resources are paid rents, and this is the way in which money costs of all producers are equalized. All units of the product are then sold at a single price. But it is essential that increases in production be subject to diminishing returns. If technological conditions were such that increasing returns were the rule, then the competitive system would lose its mechanical workability.

Professor Graham attacked the classical law of comparative costs on the basis of an argument that assumed increasing returns (decreasing costs) to the production of watches, and

diminishing returns (increasing costs) to the production of wheat. Country A had a comparative advantage in the production of watches, and Country B had a comparative advantage in the production of wheat. Though it appeared that both countries would gain from trade, in fact, the consequences of specialization were to lower the real income of Country B which expanded its increasing cost industry by transferring resources from the decreasing cost industry.

Knight effectively shows Graham's argument to be fallacious. The fundamental fallacy is that he assumes a symmetry between the laws of diminishing and increasing returns, but in fact they belong to different levels of discourse. The law of diminishing returns is a static law, really an implication of the maximum principle. Unless production is subject to diminishing returns, the entrepreneur cannot determine the optimum combination of inputs consistent with maximum profits. He cannot determine the various "least cost" combinations of inputs for the different levels of output. On the other hand, the so-called law of increasing returns, instead of being a deduction from a maximum principle, is in most of its formulations rather of the nature of a historical generalization. Because of growing technological knowledge, with expanding production the unit cost of output has fallen. This is a dynamic development, not appropriately discussed within the framework of static competitive price theory. In terms of static analysis, this development is represented by shifts in the supply schedule rather than movements along a given

supply schedule.

Either increasing returns require this dynamic process, which takes one outside the static framework; or, if firms have actual static (reversible) falling cost curves, then one firm will increase in size until it captures the whole market. The assumption of perfect competition is no longer applicable. In either case, Graham's supposed demonstration of how competition might lead to unsatisfactory results entails importing into the analysis conditions inconsistent with the competition of classic theory.

Knight does not argue that the free enterprise system is "a perfectly ideal system of social organization." He says that "nothing is farther from the aims of the present writer than to set up the contention that it is." But "the weaknesses and failures of the system lie outside the field of the mechanics of exchange under the theoretical conditions of perfect competition. It is probable that all efforts to prove a continued bias in the workings of competition as such, along the lines followed by Professors Pigou and Graham, are doomed to failure. Under certain theoretical conditions, more or less consciously and definitely assumed by economic theorists, the system would be ideal."¹ But it would be ideal only with respect to mechanical efficiency. Therefore, the relevant criticism does not relate to the mechanical functioning of the system but to the ethical significance of the results it achieves

¹ Ethics of Competition, p. 235

Human beings are not "individuals," to begin with; a large majority of them are not even legally competent to contract. The values of life are not, in the main, reducible to satisfactions obtained from the consumption of exchangeable goods and services. Such desires as people have for goods and services are not their own in any original sense, but are the product of social influences of innumerable kinds and of every moral grade, largely manufactured by the competitive system itself. The productive capacities in their owned persons and in owned external things which form the ultimate stock-in-trade of the human being are derived from an uncertain mixture of conscientious effort, inheritance, pure luck, and outright force and fraud.¹

* * * * *

However, the mechanically ideal character of the system of perfect competition received an important qualification with Knight's criticism of Wicksteed's doctrine of opportunity cost. In a review of the 1933 reprint of Wicksteed's The Common Sense of Political Economy,² Knight described how he was forced to straighten out his ideas on the subject of cost before he was able to write his review. As a result, he said, "I have to modify quite materially some doctrines previously expounded in print."³ This earlier doctrinal position contained "one rather crucial and, to me now, painfully obvious error . . . the general principle of alternative product cost so carefully and elaborately expounded by Wicksteed is sub-

¹ ibid., p. 235

² "The Common Sense of Political Economy (Wicksteed Reprinted)," Journal of Political Economy (1934), reprinted in History and Method. This argument is considerably expanded in "Notes on Utility and Cost," published in The Economic Organization (1951). This is the English translation of two articles published in German in Zeitschrift für Nationalökonomie (1935)

³ op.cit., p. 105

ject to a sweeping limitation. It has to do with the question of 'irksomeness' or subjective cost, which was the central cost concept of the older classical economists . . . "¹

According to the Wicksteedian opportunity cost formula, we say that, at equilibrium, prices are determined by costs of production, these costs representing the products that could be produced by resources if these were transferred from their present employment. But this requires that resources be on a margin of indifference between these alternative employments at the same pecuniary reward. If, in shifting from one employment to another, the resource receives a higher money return in the new employment, then it cannot be described as "the same" resource. The addition to the output of one product due to subtracting a dollar's worth from the other will not be exactly a dollar's worth but something more or less. The idea of opportunity cost will be inapplicable.

These considerations have their most important bearing with respect to labor power. There is an asymmetry between the worker's situation as rational consumer and as seller of productive capacity. As rational consumer he maximizes the utility from a given income by making the incremental utilities per dollar equal for all types of expenditure. If the incremental utility for a dollar's worth of A is greater than that for a dollar's worth of B, there will be an opportunity to increase total utility through a shift in expenditure. But

¹ ibid., p. 106

as seller of labor capacity, the worker is not able to apportion his productive capacity among employments so that the marginal productivity of an hour's labor is equal in the various employments. The principle of division of labor practically requires that he sell all his capacity to one employer. The only decision he can make--and this is limited--is between labor and leisure. The choice between labor and leisure differs between employments, "the composite non-pecuniary alternative given up in working is an extremely complicated and subtle concept and would never be identical in two occupations."¹ Insofar as there are differences in psychological attitudes as between pecuniary and non-pecuniary employments on the part of the resource owners--especially labor though Knight insists the same reasoning logically applies to landlords and capitalists--then the resources furnished by the different owners to different occupations are not the "same resources." We can make no statement about the equalization of return, because we are not dealing with a homogeneous resource or "factor."

This idea of a shifting boundary between pecuniary and non-pecuniary occupations implies that one is able to draw no clear-cut boundary/^{around} that part of human conduct to be included in economic science. Any change in general economic conditions, "physical or psychical," would change the definition of the term "available productive capacity." One might

1 ibid., p. 107

consider the example of a housewife who is prepared to join the labor force at a sufficiently high wage rate. The situation is no longer one of pricing a "given" labor supply. "We must face the fact that the notion of given magnitudes in economic life is itself an assumption subject to severe limitations."¹ The idea of maximum output from given resources becomes elusive, difficult to apply to a concrete economic situation, "the less correspondence there will be between the relative utility and relative cost of different product units unless workers are free to move from one occupation to another and are homogeneous, and conditions are such that they move in response to an insignificant difference in money earnings in the two fields."²

It should be noted that the same reasoning with which Knight qualifies the doctrine of opportunity costs--that there are no resources "given" prior to the pricing process--also applies to the marginal productivity theory of distribution. But it would be misleading to suggest that Knight believes his argument indicates discarding these doctrines or even questioning their "essential" truth, ". . . the theory of cost and price will have to run primarily in the alternative cost terms of Wicksteed's 'Common Sense'. Most of what can be done to

1 ibid., p. 112

2 "Notes on Cost and Utility," The Economic Organization, p. 169

make it more realistic and true to fact will take the form of recognizing limitations and specifying in a general way the kinds of divergences from reality which are to be expected . . . "¹

* * * * *

The criticism of the doctrine of opportunity cost raises a question about the applicability of the concept of a maximum to the economic system as a whole. The social economic problem can doubtfully be stated as one of getting the largest value of output from given resources. This is a conceptual problem, one that would present the same difficulties with respect to a utopian socialist economy as to a free enterprise system. However, even if we assume that the notion of an optimum can be given an unequivocal meaning, there are two "mechanical" obstacles to its actual realization in a free enterprise system. One of these is the problem of monopoly.

Knight says that "monopoly is indeed a serious problem. But consideration of well-known facts would show both that the amount of monopoly is fantastically exaggerated in the public mind and that a substantial amount is necessary in a free and progressive economy."² There is no way of making a clear distinction between "legitimate" profit and "illegitimate" monopoly gain. "All profit is in principle monopoly profit, due to friction limiting the mobility of resources . . . profit,

¹ "Common-Sense," op.cit., p. 116

² The Economic Order and Religion, p. 106

including so-called monopoly profit is not an evil except where it is too much or is maintained too long--and there is no definite standard for saying when it is too high or lasts too long."¹ Knight offers the opinion that even with monopoly gain added into "normal profit," the total would be "at least fully offset by losses."²

In earlier writings, Knight argued against the view that business monopolies were of dominant importance on the ground that the technological situation was not favorable to their creation. It was held that, typically, unit costs begin to rise at an early stage of output, making the optimum size of plant relatively small, consistent with the maintenance of effective competition. "No fallacy is more pernicious with reference to intelligent economic policy than the popular illusion that large-scale business is in general more economical than small-scale. If the scale of operations expands very far it will always run into increasing costs; and as the facts stand the gains are more conspicuous than the losses so that even careful study inevitably overestimates the advantages and underestimates the critical size at which increasing costs set in."³

Decreasing costs occur because too much of a fixed input has been committed to a plant. There is surplus capacity.

¹ Intelligence and Democratic Action, p. 98

² ibid.

³ "Cost of Production and Price over Long and Short Periods," (1921) Ethics of Competition, p. 210

Knight believed that this could happen in the early stages of production, due to indivisibilities in the fixed input. Or it could happen because of speculative overbuilding of an industry due to anticipation of expanding demand. But it was argued that productive capacity, both capital and labor, became mobile in a long run of not too extended duration. Production would be expanded to the stage of increasing costs, or the surplus capacity would be reduced through transfer. Decreasing costs were held to be likely in an industry "naturally" monopolistic--such as a public utility--or one speculatively overbuilt. But even if there were technological advantages in large scale production, there were offsetting increased costs, due to the difficulty of managing large organizations.

However, one runs into all the familiar conceptual difficulties when he attempts to fill the "empty economic box" of the static law of diminishing returns with data relating to the dynamic factors underlying the development of modern corporate enterprise. What is the definition of an industry? Does the industry produce a single well defined physical product? What are the units in which we measure the physical inputs? What is the basis for classifying inputs into fixed and variable?¹

¹ Cf. J. H. Clapham, op.cit.: ". . . I think a good deal of harm has been done through omission to make it quite clear that the Laws of Return have never been attached to specific industries; that the boxes are, in fact, empty; that we do not, for instance, at this moment know under what conditions of returns coal or boots are being produced."

As we have seen, in the development of his capital theory, Knight came to deny that there are "diminishing returns to investment, . . . that growth of investment will lower the quality of opportunities open and hence the rate of yield."¹ Investment does not take the form of adding physical objects called "capital goods" to fixed supplies of "other factors," . . . "'technology', broadly defined, is . . . a form of capital."² Knight seems never to have discussed the consistency of these ideas about investment with his views about the dominance of increasing costs in industry. But if investment in a given industry takes such forms as scientific research leading to improved technology, or the creation of new consumer demand--and it will be recalled from our discussion of the theory of interest that Knight regards both these as forms of capital formation--the classic law of diminishing returns provides a most inappropriate conceptual framework for the discussion of the factors determining the relation of profitability to firm size.

However, in more recent writings, Knight has used another argument. He says (1958) that the system, even if not "perfectly" competitive, must be "prevailingly" so, else it would simply break down in chaos.³ It may be possible to point to many kinds of economic activity which seem to deviate from the

1 Intelligence and Democratic Action, p. 90

2 ibid., p. 91

3 See, e.g., ibid., p. 106

perfectly competitive. Yet the fact that the system "works" proves that the deviations are less significant than they appear. But Knight would surely concede that this argument is not conclusive. It involves the "fallacy of affirming the consequent." One must show not only that its prevailing competitive character could be responsible for the workability of the modern corporate enterprise system, but that there is no alternative explanation for this workability except reasonable approximation to the classic model of perfect competition.

But examination of Knight's argument will show that he does not so much contend that the actual mid-twentieth century American economy approximates the classic model as that it would do so in the absence of unwise intervention, and with improved economic understanding on the part of the public. His contention is that the organization of economic life about the free market, with coercive political control minimized, is a feasible arrangement, it is "mechanically" workable.

Thus Knight believes that monopoly is primarily a political rather than an economic problem. "I still think Adam Smith is largely right: if the government would keep its hands clean of encouraging monopolies, much of the problem would very largely take care of itself."¹ Even the "business interest" offers its principal threat to free society "through political action as a pressure group." But Knight says "it stands no chance in competition with voting masses 'agitated'

¹ Intelligence and Democratic Action, p. 99

and organized for power and plunder--all the worse for their self-righteous motivation."¹ Therefore, "where monopoly really bites is in the legal brigandage of organized wage earners and farmers . . . Obviously, anything like nationwide collective bargaining and striking is coercion of the country . . . and . . . the heaviest cost falls on other 'workers', especially those still weaker."²

Knight holds that the "major requirement for intelligent economic policy is to get people to take an objective attitude rather than to think that monopoly in particular, and even violence up to mayhem and arson if not murder is right or wrong depending on who does it . . . the same conduct is considered terribly wicked if it is done by business and quite virtuous and deserving of approval and support if it is done by or for labor or the farmer."³

* * * * *

The other "mechanical" problem is that of the business cycle. Knight has described the cycle as a "phenomenon of the mechanics of money." He holds that explanation of the cycle requires application of the theory of speculation to money.

A speculative market is one in which the commodity traded can be stored. It exists in stocks. Such a market

1 "The Role of Principles," op.cit., p. 270

2 ibid.

3 Intelligence and Democratic Action, pp. 99-100

is a case of "unstable equilibrium, and any small accidental change will upset it and cause oscillations."¹ For example, if there is a rise in the price of a storable commodity, the upward movement may create a belief in a upward trend, with a consequent "reverse effect," the rise in price increasing the demand. But Knight argues that in a "well organized market, this situation must soon be recognized by professional speculators and will lead to a reversal in the direction of movement, which will then similarly tend to go to an extreme in an opposite direction."²

Similar speculative influences operate on the side of supply in the case of a product with a long production period.³ "If at a particular time the production of apples is profitable, a period of some ten years--the time required to plant trees and bring them to the age of bearing--may elapse before an increased flow of the product into the consumption market acts to reduce the price. In the meantime, the extent to which the development of productive capacity may be over-

1 "The Business Cycle, Interest and Money," (1941) History and Method, p. 206

2 ibid.

3 It should be noted that to discuss a "long production period" in the case of a particular product is not inconsistent with Knight's view that it is impossible to determine an "average period of investment" of the "original factors" for the economic system as a whole. The point of Knight's attack on the Austrian theory of capital is that there are no "original factors." It is not necessary for his purposes to deny that manufacturing processes require varying time periods.

done might go virtually beyond any assignable limit."¹

Knight claims that the explanation of the cycle is to be found through a combination of these two principles--speculative demand, combined with lags in the response of production behind desired changes in production. Consider the situation in the depth of depression. Suppose that there is an incipient upward tendency in business conditions. This will tend to act cumulatively as a stimulus to expansion. The anticipation of rising prices will cause a dishoarding of idle balances, and the creation of new balances by the banking system.

As unemployment of heavy industry equipment is absorbed, a wave of investment in these industries will naturally follow, with a still greater increase in the output of consumption goods. Hence the investment tends to be "overdone" and/or to be made at "excessive" cost. This last feature is connected with the absorption of unemployed labor, and perhaps with a drawing-in of "inferior" workers, but especially with a rise in wages, probably gaining on the rise in prices of consumption goods. The interval of "inflation" may continue until idle funds (including lending power) are exhausted. This situation will certainly lead to a "crisis" and the reversal of the whole process.²

The primary fact about cyclical instability, on Knight's account, is speculation in the value of money. "This sort of speculation is largely unconscious, but for that reason tends to be more important in its effects . . . Whenever prices seem to be rising or about to rise, all who hold this to be the case will act in a way to make them rise, by converting money into

1 ibid., p. 207

2 ibid., p. 214

goods, through purchase and construction--and conversely. In this case there are no tolerably definite and known conditions of equilibrium to guide speculation and restrict the range of oscillation, in contrast with the world trade in a commodity like wheat."¹

Knight proposes the following remedy: "Some means must be found for preventing individuals, business units, and banks, acting separately or in conjunction, from behaving in such a way as to change drastically and rapidly the amount of effective money in active use . . . "²

This can be accomplished only by positive monetary control. Knight agrees with socialist critics in their view that cyclical instability is an inherent feature of the enterprise system. Such a system must use money, "and the circulation of money is not a phenomena that tends to establish and maintain an equilibrium level." The nature of the problem is indicated by this proposition: "The monetary system can never be made automatic." It requires "deliberate action, based on constant attention, correcting or offsetting tendencies to expansion or contraction." This creates a serious problem "in safely delegating the necessary authority to any human political agency for exercise on behalf of society."³

1 Risk, Uncertainty and Profit, Preface p. xlvi

2 "The Business Cycle," op.cit., p. 223

3 ibid., p. 225

It is to be noted that Knight does not accept the proposal to eliminate all discretionary control over the money supply, a policy position associated with the "Chicago School,"¹ of which he is usually regarded as a member.

It is now generally admitted that the money system has to be controlled. The controversy that persists among the economists is over the question whether it can be controlled according to rules enacted in law, or whether it requires a lot of discretionary power on the part of administrators. The issue is partly what rules to lay down but is largely one of degree, as to how definite the rules can be. I lean rather strongly toward the side of administrative discretion and judgment, being skeptical about how far rules can be made in advance or especially how far they would be made wisely by the agencies that would in fact make them. If we do not trust administrative authority acting in the situation of the moment--and I admit all the dangers of that--we have to trust legislative authority to foresee conditions in advance and enact suitable rules, which must be precise as to amount and timing of action; and then an administrative authority must be trusted to interpret and apply them.²

However, Knight rejects any attempt to use the tendency toward cyclical instability as an argument for collectivism, "or any sweeping action by government outside the monetary field."³ If a socialist system allowed freedom of choice in consumption and production, as the liberal socialists propose, it would have to use money, and therefore "the same tendency to cyclical oscillations would manifest itself and would pre-

¹ Contrast Milton Friedman, Capitalism and Freedom (1962), pp. 51 & ff., "Rules Instead of Authorities."

² Intelligence and Democratic Action, pp. 105-6

³ "The Business Cycle," op.cit., p. 225

sent essentially the same problem of control."¹

An economic system like that of the United States could abolish the evils of cyclical instability "without the need for any legal or constitutional powers beyond those already unquestionably possessed, . . . if only it had sufficient wisdom, internal harmony, and support from the public in taking the necessary measures."²

The cycle points up an interesting aspect of Knight's social philosophy. The cycle does not, according to this philosophy, present a social problem. "Only the problem of agreement upon ends and upon modes of cooperation is really social."³ Social problems arise out of conflict between value systems. If there is no conflict between group interests, then there is no social problem. ". . . with negligible exceptions, the business cycle does not work to the advantage of any significant group or interest in 'capitalist' society. On the contrary, practically everyone suffers from it . . . Hence the problem of cycle analysis does not arise out of and does not involve conflict of interest. This means that remedial action is a matter of economic understanding and of political intelligence and administrative competence in matters of an essentially technical character."⁴ It is

1 ibid., p. 226

2 "Socialism: The Nature of the Problem," (1940) Freedom and Reform, ftn., p. 162

3 "Pragmatism and Social Action," ibid., ft., p. 38

4 "The Business Cycle," op.cit., p. 225

a problem of "knowledge of causes and appropriate remedies and administrative competence on the part of the political organization."¹

¹ "Socialism", op.cit., p. 162

(2) The Ethical Judgment

(a) the doctrine of maximum freedom

To complete the appraisal of an economic system, one must go on from the "mechanical" judgment of the efficiency with which the system satisfies given wants to a judgment of the wants themselves. These must be ranked into "higher" and "lower." This requires reference to an ethical value system, which cannot be derived by the methods of positive science. The study of conduct remains incomplete if carried on solely on the scientific plane. It has to include a "criticism of values," an activity Knight says is more like artistic creation than scientific investigation.

Knight is critical of the ethical justification of the enterprise economy given by the British laissez faire economists and the utilitarian philosophers. They went astray through attempting to rationalize economic freedom by means of a doctrine of maximum satisfaction.¹ The essential steps in their arguments are these. The good is individual, and each individual is the ultimate judge of it. The maximum of good (utility, satisfaction) will be realized through maximum freedom. Each individual will act so as to achieve a maximum of satisfaction from the available means, which includes the opportunity to trade. If all exchanges are free, then they

¹ "Freedom as Fact and Criterion," (1929), Freedom and Reform, Knight sometimes argues that this was not their fundamental argument for economic freedom, as we shall see.

must increase the satisfaction of both parties to each trade.

But this utilitarian doctrine confused freedom with power. The fact that an exchange is voluntary does not insure that it is "fair," because the terms agreed upon must depend on the relative economic power of the bargainers. "An 'equivalent' to the choosing individual himself is simply the maximum that the other party will pay, a standard of force with no flavor of fairness."¹ Such fairness as the system can assure is brought about through the competitive market, which provides alternatives for all participants. But then the most that can be assured is that each individual shall keep the values originally possessed, as measured by the established price system. The system allows each individual freely to exercise whatever power he happens to have, but it has nothing to say about the equity of this distribution of power.

These considerations lead Knight to urge that economists give up any idea of proving that economic freedom leads to a state of maximum satisfaction. Freedom is not a means to any value, but is itself the highest end. So it becomes important to stress that economic freedom does not lead to "ideal" or even necessarily "good" results. Freedom cannot be rationalized in this way. The ethical significance of freedom is itself an ethical proposition. "Scrutiny of any typical case of unfree behavior reveals that the coercive quality rests on an ethical condemnation, rather than the ethical condemnation on a fact-

1 ibid., p. 5

ually established unfreedom . . . As long as everything is assumed to be in accordance with accepted standards of fairness, there is no feeling that freedom is interfered with . . . Freedom cannot afford an objective standard of policy, a way of escape from the subjectivity of moral judgements, when the feeling of freedom itself is derived from, or at best is another aspect of, moral approval."¹

The ethics of liberalism are debased when they are given a materialist interpretation. Knight's task as a social philosopher has been to reinterpret these ethical principles, so as to correct for what he regards as the hedonist biases of the eighteenth and nineteenth century liberals.

* * * * *

It will be useful to our subsequent discussion to take account of the evolution of Knight's views about the proper ethical rationalization of the enterprise system. His present position is almost a reversal of that with which he began. In his early writings, he explicitly rejected the idea of economic freedom as end-in-itself, and based his defense of the enterprise system on what was essentially a modified version of the doctrine of maximum satisfaction.

The main justification of the "free contract system" offered in Risk, Uncertainty and Profit was its economic efficiency. Knight denied that the system provided freedom in a meaningful sense of this term. He defended the system on the ground that it was the most effective way for society

1 ibid., p. 11

as "husbandman" or "wirtschaftender Mensch" to get "its work done as well as cheaply as possible." (p. 368)

Private property is a social institution; society has the unquestionable right to change or abolish it at will, and will maintain the institution only so long as property owners serve the social interest better than some other form of social agency promises to do. Of course there is a lot of moral flub-dub about natural rights, sacred institutions of the past, etc., and it has some power to hold back social change. But in the end, . . . the question will be decided on the basis of what the majority of people think, in a more or less coldblooded way, about the issues. (p. 369)

So Knight held that the private property owner is really a "social functionary," and the value of the free contract system, based on private property is the "illusion of ownership," the feeling that the owner has that he is acting for himself rather than for society. (p. 368)

However, though the enterprise system was held to be economically efficient, it was specifically denied that it provided freedom. Sir Henry Maine and Herbert Spencer were held responsible for a "vicious and question-begging perversion of thought" in identifying freedom with "freedom of contract." Such freedom means no more than the right of choice regarding the use of whatever property or personal capacity one happens to have, without interference from the state. At that time, Knight insisted that this was not true freedom.

With the possible exception of the word "cause" and its equivalents, it is doubtful if there is a more abused word than "freedom"; and surely there is no more egregious confusion in the whole muddled science of politics than the confusion between "freedom" and "freedom of contract." Freedom refers or should refer to the range of choices open to a person, and in its broad sense is nearly synonymous with "power." Free-

dom of contract, on the other hand, means simply absence of formal restraint in disposal of "one's own." It may mean in fact the perfect antithesis of freedom in the sense of power to order one's life in accordance with one's desires and ideals. The actual content of freedom depends entirely on what one owns. (p. 351)

In the essay, "The Ethics of Competition" (1923), Knight affirmed his belief in the system's mechanical efficiency, but he again insisted on the limited ethical significance of this fact. "Interpreting life in terms of power as such, including 'intelligence' as a form of power, there can be little question that competitive business has been an effective agency in bringing the forces of nature under human control and is largely responsible for the material progress of the modern era. It is in terms of power, then, if at all, the competitive economics and the competitive view of life for which it must be largely accountable are to be justified."¹ According to nineteenth century utilitarianism, which Knight described as the "ethics of power, glorified economics," this was justification enough. But Knight called such justification "ethical nihilism." "As to the purposes for which power ought to be used, the true problem of ethics, (the utilitarians) had nothing to say . . ." (p. 71) To say what ought to be required a specific value system, "any ethical judgement of activity must be based not upon its efficiency, the quantity of results accomplished, but on either the character of those results or the character of the motive which led to the action." (p. 73)

¹ This essay became the title piece of the collection, Ethics of Competition. Quotation from p. 68 of the reprint.

Knight therefore appraised competition from the point of view of several ethical systems. "Surely no justification of competition as a motive is to be found in the Aristotelian conception of the good as that which is intrinsically worthy of man, or the Platonic idea of archtypal goodness . . . Christianity has been interpreted in . . . many conflicting ways . . . ; yet even this wide range of uncertainty will not admit competitive values into Christian thought." (p. 72) "Thus we appear to search in vain for any really ethical basis of approval for competition as a basis for an ideal type of human relations, or as a motive to action." (p. 74)

One possibility was to consider economic competition as a game, one regarded by business leaders themselves as "the biggest and most fascinating game yet invented, not excepting even statecraft and war."¹ But at this time Knight argued that even as a game the competitive system could not be given a high rating. "As long as we had the frontier and there was not only 'room at the top' but an open road upwards, the problem was not serious. But in a more settled state of society, the tendency is to make the game very interesting indeed to a small group of 'captains of industry' and 'Napoleons of finance', but to secure this result by making monstrous drudgery of the lives of the masses who do the work. There are limits beyond which this process cannot be carried without arousing a spirit of rebellion which spoils the game for the leaders themselves. . .

¹ Risk, Uncertainty and Profit, p. 360

² "The Ethics of Competition," op.cit., p. 61

Knight questioned the ethical value of sportmanship, even assuming the game a "fair" one. "Is success in any sort of contest, as such, a noble objective? . . . To 'play the game' is the current version of accepting the universe, and protest is blasphemy; the Good Man has given place to the 'good spirit' . . . The greater virtue is to win, and meticulous questions about the methods are not in the best form, provided the methods bring victory. The lesser virtue is to go out and die gracefully after having lost." (p. 67)

At this time, there was no attempt to rationalize the enterprise system on the basis of the ethical value of free economic choice. On the contrary, it was held that there was "a deepseated conflict between liberty and equality on the one hand and efficiency on the other." (p. 61) The "only justification" of the system was "that it was effective in getting things done," (p. 74) together with the weak ethical injunction that well enough had better be let alone, since attempts to improve matters would most likely make them worse, "radical critics of competition . . . generally underestimate egregiously the danger of doing vastly worse." (p. 58)

Yet by the late twenties, there had occurred a striking change in Knight's views about the possibility of offering an ethical rationale for the system of free competition. He evidently came to believe that such a rationale could and should be offered, and that the essential step in developing it was a reinterpretation of the meaning of freedom.

More precisely, he came around to that same "vicious and question-begging" view which he had criticized, at the time of writing Risk, Uncertainty and Profit, in Maine and Spencer.

In contradiction to the statement made in Risk, Uncertainty and Profit, identifying freedom with power, he wrote: "In our opinion it is unwise to attempt to vindicate freedom as an ideal by defining it to include power. Thus Graham Wallas calls freedom the capacity for continuous initiative, and others distinguish between positive and negative freedom. It is surely better to work out clearly the relation between freedom and power as distinct factors in conduct."¹ A recent statement (1958), stresses his views about the necessity to keep separate freedom to choose and power to act.

The major fallacy . . . is to hold that one is not free unless he has the power to do anything he would like to do, or to get anything he wants, and has a right to have, or to be free from, any alleged wrong . . . freedom and power are different dimensions of voluntary action . . . The major premise of liberal ethics is the right of every person to do as he will, without interference by any other--and as he can, or otherwise could . . . I stress can because that is where the major problem of definition arises. Freedom as a right presupposes, takes as given, both the means of power possessed by the person and what he may want to do.²

Perhaps the best way of bringing out the change in Knight's views about the ethical justification of the enterprise system is through a comparison of the essay, "The Ethics

1 "Freedom as Fact and Criterion," (1929), op.cit., p. 5

2 Intelligence and Democratic Action, pp. 16 & 123-4
Underlining added

of Competition" (1923), with the essay, "Ethics and Economic Reform" (1939). The later essay is essentially a reworking of the ideas of the earlier one. But there is this significant difference. In "Ethics of Competition" he takes the theory of competitive price as a purely factual account of the working of the enterprise system. Knight discusses its ethical appraisal in accordance with the tenets of various ethical systems, the conclusion being that only the weakest kind of ethical rationalization can be offered. In "Ethics and Economic Reform," he treats orthodox economic theory, based on the concept of voluntary choice, as itself an ethical doctrine, the "ethics of liberalism," providing the blueprint for a system of maximum freedom. Therefore it incorporates its own ethical justification. The problem of the later essay centers on the fact that, though the enterprise system complies with the ethic of freedom, it admittedly fails to provide for other values, such as security and equality. He therefore considers replacing or supplementing it with other ethical systems, those of Hegelian Idealism, Marxism or Christianity.¹ The conclusion is that these systems have nothing to offer as a guide to the reform of institutions. Therefore, "emphasis on the necessity of an onus probandi in favor of conservatism, and against change, must stand as our last word . . ."²

1 "Ethics and Economic Reform," op.cit., pp. 75-128

2 ibid., p. 74

* * * * *

Thus the root idea in Knight's libertarian social morality is that of freedom interpreted as voluntary choice. As he has observed, this is only one of many definitions of freedom, a term "used as a slogan by the most diverse ethical and social philosophers and programs, . . . ecclesiastical authoritarianism . . . and contemporary totalitarianism . . . claim to embody the 'real freedom' . . ." ¹

For Knight, freedom means "free will." In order for an act to be free, it is essential that the individual could have acted in another way. Freedom is associated with possibility in contrast to scientific determinism, which is a "denial of possibility." The exemption from causality gives what Knight calls "metaphysical freedom." The possibility of free discussion and the "validity of moral distinctions" presuppose metaphysical freedom, but the practical political problem centers on the idea of freedom as voluntary agreement among responsible individuals. And this freedom is the opposite not of determinism but of coercion. Coercion includes persuasion, "a species of force, based on deception; and all coercion presupposes metaphysical freedom in both parties." ² A free act is therefore one that is both uncaused and uncoerced. Freedom, as Knight defines it, requires contingency in both of these senses, and, as he adds, "a mysterious some-

1 "The Sickness of Liberal Society," op.cit., p. 371

2 The Economic Order and Religion, p. 55

thing more, an act, in a unique sense, of 'will'."¹

Since freedom and coercion are, for Knight, ethical categories, this means that there are no objective tests for a free act. "If one does not believe in freedom, then all acts are like and equally determined (by physical or psychological conditions, or both according to taste)."²

The moral quality of rational action is associated exclusively with the act of choice, a purely private, internal act. There is a rigid separation between the internal decision and the external action.³ It is only the former that concerns the libertarian moralist. He can speak of a society with perfect "actual" freedom, and yet with "effective" freedom virtually nil.⁴ This would be the case if under a system of economic laissez faire all the economic power was centralized in the hands of a few ruthless individuals.

The means of power possessed by the individual is treated by the libertarian moralist as simply "given," the proper concern of other ethical systems but irrelevant to the judgment of freedom. Since the free quality of an act depends exclusively on the absence of coercion in choosing to use whatever power one happens to have, it follows that "at least two of F. D. Roosevelt's four freedoms are absurd: 'freedom from' want and

¹ Risk, Uncertainty and Profit, preface (1957), p. lxiii

² "Freedom as Fact and Criterion," op.cit., p. 12

³ "The Sickness of Liberal Society," ibid., p. 382

⁴ "Freedom as Fact and Criterion," ibid., p. 4

'freedom from' fear."¹

The libertarian interpretation of the "essential social-ethical principle of liberalism" is "that all relations between men ought ideally to rest on mutual free consent, and not on coercion, either on the part of other individuals or on the part of 'society' as politically organized in the state."²

To rationalize the enterprise system on the basis of the "mutual consent principle" is equivalent to substituting the doctrine of maximum freedom for the doctrine of maximum satisfaction. This substitution is held to bring out the authentic meaning of liberalism. To make freedom instrumental to satisfaction or "happiness" is to provide a rationale for political intervention if--as is inevitably the case--a large proportion of the electorate are dissatisfied with their lot under a regime of economic freedom. He writes of "the general inversion of meaning which liberalism has recently undergone in current usage, particularly in this country. Within easy memory of those now in middle life, it stood for freedom, the original and proper meaning, but now it usually has the opposite reference to governmental paternalism."³

Instead of identifying the good with pleasure, the authentic liberal position, as Knight interprets it, is that liberalism takes no position on the content of ends, "liberalism is not

1 Intelligence and Democratic Action, p. 133

2 "Ethics and Economic Reform," op.cit., p. 49. Underlined passage is italicized in the original.

3 Intelligence and Democratic Action, pp. 14-5

logically committed to any particular conception of the nature or content of the good, individual or social."¹ Rather, "the end of action is whatever the individual wants and strives to do, or to get, or to be, as the case may be . . . as long as he does not infringe on the like freedom of other individuals to pursue their own ends in their own way."² This ethical position corresponds to the methodological position that the ends of action are outside the range of scientific investigation, the economist takes them as "given." Both scientific attention and ethical concern are shifted from what is chosen to the act of choice itself.

The mutual consent principle properly applies to all fields of human relations, not just to the economic. But for reasons attributable to the historical circumstances in which the liberal faith arose, Knight believes that the early economists and philosophers tended to overstress economic freedom. This is because they were in reaction against the anachronistic controls of the Mercantilist period.

The idea that the social problem is essentially or primarily economic, in the sense that social action may be concentrated on the economic aspect and other aspects left to take care of themselves, is a fallacy, and to outgrow this fallacy is one of the conditions of progress toward a real solution of the social problem as a whole, including the economic aspect itself. Examination will show that while many conflicts which seem to have a non-economic character are "really" economic, it is just as true that what is called "economic" conflict is "really" rooted in other interests and other forms of rivalry, and that these would remain unabated after any

1 "Ethics and Economic Reform," op.cit., p. 53

2 ibid., pp. 53-4

conceivable change in the sphere of economics alone.¹

Nevertheless, even if economic freedom is one among other freedoms--political, religious, intellectual--special emphasis on it "might be justified within very wide limits by the fact that it is basic to other forms of freedom, as historical fact and general considerations join in proving."²

The proposition that economic freedom is logically prior to all other freedoms is virtually a tautology within the system of libertarian ethics, because economic choice, interpreted as an exercise of free will, is by definition what the libertarian means by a free act. In the ideal though unattainable "antinomian anarchism," characterized by absence of enforced law,³ all disagreement about the laws or rules of association would be settled by free discussion, and this, for Knight, is also a form of voluntary exchange. So he believes it "unfortunate . . . that the term 'laissez faire' became distinctively attached to economic freedom. It means simply 'freedom' and was supposed to apply as a matter of course to all individual and associative life."⁴

The model of perfect economic competition presents the blueprint for an association of free individuals, cooperating on the basis of voluntary choice. The category of "joint or

1 ibid., p. 52
2 ibid., p. 52
3 "The Rights of Man and Natural Law," Freedom and Reform, p. 29
4 "Free Society," (1948) History and Method, p. 288

cooperative action between individuals for purely individual ends, with a view to increased efficiency through specialization" does not "involve either coercion or conflict, as long as the parties are in agreement as to the terms of the relationship. This type of behavior takes place in and implies individualistic economic organization, and its treatment is the main subject matter of theoretical economics."¹

On the other hand, political action involves the use of coercive power. ". . . since complete unanimity is not usually to be had, complete freedom implies the right and power to leave the group, hence to join other groups, and eventually to form groupings at will." Any association is said to be "political" to the extent its members do not have this right to leave at will.²

To extend freedom--that is, elevate the moral quality of social life--we must expand economic activity and restrict political activity, which is another way of saying that we must enlarge the scope of mutual consent. This view of freedom as end-in-itself Knight says is related to the idea that the "dignity of human life" requires one "to live responsibly, to make one's own decisions and take the consequences." He asserts that it derives from "the religious ethic of Puritanism, which certainly played an important role in the historical

¹ "Science, Philosophy and Social Procedure," Freedom and Reform p. 208

² "The Sickness of Liberal Society," ibid., p. 391

culture movement of which liberalism was a phase."¹

Since "liberalism means only that individuals and groups shall not coerce others," the argument about productive efficiency is held to be subsidiary. There is no pressure for anyone to strive for efficiency in any sense. "He is free to pursue such ideals as 'poverty, chastity and obedience'-- or universal 'love' or any form of ascetic practice, so long as he does not coerce others or infringe on their similar freedom." Moreover, individuals "do not have to establish markets or make exchanges under any form, to say nothing of conduct 'enterprises' for profit. They may practice any type of cooperation, and adapt any mode of apportioning burdens and benefits upon which the members themselves can agree."²

Knight says that the nineteenth century was the age of liberalism. It was the "wonderful century," the "age of freedom, religious, political and social as well as economic . . . characterized by unparalleled progress in science, pure and applied, in the mastery of mind over matter and the elevation of the general standard of life." Yet in the face of a remarkable record of progress, the century "eventuated in unprecedented self-criticism and discontent, in growing internal class conflict, threatening war, and in actual international war . . . threatening universal destruction." Knight claims that this paradox "is rooted in growth of ideals and

1 "Ethics and Economic Reform," ibid., pp. 55-6

2 ibid., p. 54

expectations beyond achievements."¹ The paradox sets the problem of economic ethics.

This problem centers in what Knight calls "the most important single defect . . . in liberal individualism as a social philosophy." This is "that liberalism takes the individual as given, and views the social problem as one of right relations between given individuals."² There is said to be "an element of profound truth" in the assumption underlying the individualistic economic ethic . . . that the individual is either unalterably 'given' as he stands, or is morally 'self-made' . . . "³ But it is only part of the truth. The individual, with his wants and his productive capacity, the latter in the form either of personal abilities or external property, is what he is partly because of his own efforts, but mostly because of a combination of social and institutional factors over which he has little control.

Indeed, the "primary" unit of liberal society is not really the individual, but the family, "liberalism is more 'familism' than literal individualism."⁴ Because of this, there is a tendency for any free social-economic system to move further away from and not toward fundamental human equality. Economic power can be used to acquire more power, and this cumulative

1 The Economic Order and Religion, pp. 104-5

2 "Ethics and Economic Reform," op.cit., p.69

3 "The Sickness of Liberal Society," op.cit., p. 382

4 "Ethics and Economic Reform," op.cit., p. 70

tendency operates not only during the lifetime of the individual, but from generation to generation, due to the family system. The regime of economic freedom tends to realize the "natural" justice of exchange of equal values. But it cannot pretend to achieve distributive justice. On any widely acceptable ethical standard, "social ethics must look to the distant future and take into account the unborn and the whole character of culture, and not merely relations between given individuals."¹

Ideas of fairness are likely to stress "distributive" rather than "natural" justice, the right to "be" equal rather than the right to "have" equal rights. So the impatience with the inequities of the free economic order, and the demand for the exercise of political power. But if "any organization is to be improved, action to this end must first of all be based upon an understanding of the existing rules and the way they work. . . . Moreover, it is necessary to have a reasonably clear conception of the ideals which are to define the direction of improvement."²

There are two points of view from which have come criticism of the existing order, and proposal for economic reform. One of these blames our social maladies on excessive materialism, too exclusive trust in science and neglect of moral and spiritual values. The other claims that our troubles are due to our

1 ibid., p. 72

2 The Economic Order and Religion, p. 108

failure to extend the applications of scientific technique to social problems. These are the viewpoints expressed in the two kinds of program for reform Knight has been concerned to oppose. One he calls "moralism," the other is "scientism." "The first position is typically advocated by our humanists and literary intelligensia, as well as by the 'preachers' in the narrow religious sense, but perhaps derives its most serious support from organized religion. The countermovement is represented by a substantial proportion of contemporary scientists, including the human and social as well as the natural sciences".¹

Modern man is said to lead an ambivalent existence, torn between two contradictory ethical systems. Society is "moral like-mindedness," but the "essential feature of the present social problem is the fact that our ethical common sense . . . seems to be little more than a tissue of vague generality and contradiction."² The basic contradiction is that "between the absolutist, negativistic, personal idealism taught by Christianity . . . and the positive, activistic, relativistic and practical norms of utilitarian mutualism and sportsmanship."³ "The Christian ethic repudiates power as a virtue or value, viewing it rather as an evil temptation; but the ordinary behavior of Christian-European man suggests . . . he 'really'

1 "The Sickness of Liberal Society," p. 371

2 "Ethics and Economic Reform," ibid., p. 45

3 ibid., p. 45-6

admires or desires little else."¹

Knight contends that Christianity provides no guidance for social change, . . . social problems require intellectual analysis in impersonal terms but . . . Christianity is exclusively an emotional and personal morality . . ."² The teachings of Jesus and Paul are to be understood in the context of their belief in the imminence of the Kingdom of God, to be established by divine intervention. After its establishment, the ordinary problems of living would no longer exist. Their moral teachings should be understood as purely "interim ethics," therefore of dubious general applicability. It was reasonable for the early Christians to simply accept what is, "render unto Caesar the thing that are Caesar's." Thus what Knight regards as the negative, acquiescent character of historical Christian social theory.³

The "spirit" of the Christian religion is contained in the "gospel of love" (caritas, agapè). "Thou shalt love the Lord thy God . . . and thy neighbor as thyself." But Knight argues that this idea of loving relations between individuals cannot be developed into a program for social action.

Considering love in terms of the Golden Rule, it is clear that men do not want from many "love" in the special sense of ideal friendship. If it is a contradiction in thought that one might give the same quality and intensity of affection to all human be-

1 ibid., p. 46

2 ibid., p. 103

3 The Economic Order and Religion, Chapter Three

ings, good, bad, and indifferent, to the most callous criminal or the farthest Eskimo or Patagonian as well as to one's "nearest" and still "love" any of them--if this idea can be formed, it is surely neither attractive nor helpful as a moral ideal. It would seem that a "Christian" who tried to practice such love would have no friends--being in that respect like the famous economic man.¹

Attempts to reason about social problems in terms appropriate to personal relations can lead to nothing but evil consequences. "The direct effects of 'preaching' about economic relations and obligations are in general bad; and the kind of legislation which results from the clamour of idealistic preachers is especially bad." This is indicated by considering "the worst concrete cases, namely, religious-moralistic pronouncements about the obligation of employers to employees, particularly in the matter of wage rates . . . The least familiarity with the 'laws' of economics--a much abused term which properly means only the general facts--will show that any general pressure on the employers to pay wages appreciably above the market value of the services rendered is . . . certain to be injurious to the interests of wage-workers--but more especially to those wage-workers who are already in the weakest² position." To impose artificially high wages means to bring about the discharge of the poorest workers. Moreover, Knight argues that any attempt to make payment of wages in excess of the value of the service a moral obligation of employers, necessarily establishes a

1 "Ethics and Economic Reform," op.cit., p. 106

2 ibid., pp. 123-4

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feudal relation. "The natural political consequences of such interference must be either to segregate whatever elements in the population are not economically worth the wage set, and make them permanent wards of society, or else to cause the reorganization of society itself under some kind of all-inclusive bureaucratic system."¹

In contradiction to earlier views cited above, Knight takes the position that the proper ethic for governing personal relationships in free society is sportmanship. "It is hard to think of sport or sportmanship in connection with New Testament activities or teachings. But sportmanship seems to be the best that modern civilization has produced as a practical and effective moral ideal or sentiment. In a contest what each one is trying to do and wanting to do is to win . . . Moral goodness toward an opponent in a game certainly does not mean 'letting' him win, either openly or secretly . . . "²

Knight claims that the significance of play in human affairs is completely overlooked in the Christian doctrines. "The word 'smile' does not occur at all in the standard versions of the English Bible; 'laugh' and its derivatives occur as expressions of ridicule, irony or satire; 'play' appears a score of times in several meanings, but not in a sense which recognizes games, or any sort of fun, as worthy activity and

1 ibid., p. 124

2 ibid., p.111

and enjoyment."¹

Most play is social, and insofar as social play takes the form of a game, "the interest largely centers in emulation and rivalry--another essential human interest for which the religious view of life seems to have no place."² Such play is necessarily competitive and "self-assertive." "In sport it is just as necessary for the player to play his own hand and to exert his powers to win as it is for him to obey the rules."³ "When charity comes in the game goes out; people have to play to win and, in that sense, to follow a selfish interest."⁴

This antithesis between charity and sportmanship is reflected in what Knight calls "the second axiom or principle of liberalism (the mutual consent principle being its first axiom)." This is the business-versus-charity dualism. It is the principle that "business is business," which means that "business is one thing, and charity another."⁵ One is supposed to feel that it is "right" to play the game according to the rules. "That is, it is assumed to be ethically legitimate and even **positively** virtuous to desire to maximize one's 'income' . . . and to act in such a way as to do so, subject always to

¹ The Economic Order and Religion, p. 56

² ibid., p. 57

³ ibid.

⁴ Intelligence and Democratic Action, p. 109

⁵ Freedom and Reform, p. 57

the sweeping reservation of mutual free consent. . ."¹

If one plays the game of business according to the rules, he has no further moral obligation. Ideas of "just" wages and prices are a throwback to a regime of status. The only "just" price is the one determined by the unimpeded interaction of demand and supply. Knight says that the crisis of modern industrial society centers in its having lost faith "in the moral validity of market values." He warns that "the dualistic principle must be accepted whole-heartedly in relation to economic organization if the kind of civilization we call free is to exist. Business must be separated from 'charity', meaning all personal considerations The mixture of intellectual confusion with value judgments in the discussion of problems of economic ethics . . . baffles analysis, and is . . . most sinister in import."²

* * * * *

Thus, the enterprise system is not only an organization for mutual cooperation in the satisfaction of wants, it is also a game in which the market participants are not economic men but players. This gives two non-comparable points of view for judging the system. In the first capacity, the participants are instrumentally rational economic men, the results of their activities to be appraised in accordance with the criterion of "efficiency," In the latter capacity, the rele-

1 ibid.

2 ibid., pp. 60-1

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vant question is, do they have a "good game"? The "play aspect is in my opinion . . . as large and important as is the role in satisfying people's economic wants."¹

Viewing the economic order as a game, Knight believes, has the effect of demonstrating the irrelevance of both "moralism" and "scientism" to social problems.

The proper attitude for players in a game is one of respect for the rules, and concern for their improvement so it will be a "better game," as well as respect for the other players as responsible individuals. But there is no place for "love" or "charity." To attempt to work out complicated social arrangements by applying the ethic of brotherly love leads to "'Christian Marxism', which, in spite of the contradiction involved, is a natural position, and quite logical. Love of the downtrodden seems a mockery if it does not lead to action on their behalf, which is naturally taken to mean liquidation of their oppressors."²

Scientism is equally irrelevant to working out the rules of a "good game." The attitudes and interests expressed in play are, so Knight claims, the opposite of those implied by the instrumental rationality of the economic man. "A 'good' game must be good for the defeated party, whose efforts are frustrated and fail, as well as for the winner, while even for the winner the concrete result--the score made in whatever form--

¹ Intelligence and Democratic Action, pp. 107-8

² "Religion and Ethics in Modern Civilization," Freedom and Reform, p. 181

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is of no significance when achieved." Play has a serious value. It is necessary for health and normal living. Yet if one thinks of its functional significance, it loses its quality as play. If play is an activity of an intelligent being, it must have an objective. Yet the relationship between activity and goal is the reverse of what^{it} is in exercises of instrumental rationality or economizing. In pure economic action, "the activity is undertaken for the sake of some end, intrinsically desired or valued, while in play the end is rather arbitrarily set up to make the activity interesting, and is instrumental to the latter."¹ Therefore, play cannot be brought within the analytic framework of rational action. Yet all human action is a confused mixture of work and play. Knight invites the "positivist" to "ponder the fact that no objective definition can be given of 'work' and 'play', fundamental as the concepts are in any discussion of economics or of conduct in general."²

True social action, what Knight calls social procedure,³ is the discussion of value conflicts. Knight has used the analogy of the continuing discussion by the contestants of the rules of a game--to make the game "fairer" and more interesting--to illustrate the meaning of social procedure. But he holds that these value conflicts are not means-end problems,

¹ The Economic Order and Religion, p. 57

² "What Is Truth in Economics," History and Method, p. 172

³ See above, Chapter Three

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amenable to attack by the methods of positive science. ". . . the problems of life cannot be reduced to one of means for achieving given ends. And this is particularly true of the social problem. Here, the end is right terms of association, and the essence of it is the definition of the result to be achieved rather than any concrete achievement . . . Such agreement is not to be reached either through preaching abstract ideals or through adopting the experimental method." So, Knight concludes, both "the moralists and the 'scientificists' really assume that other people 'ought' to agree with them and freely accept their leadership in dealing with both ends and means . . . It is finally immaterial whether 'utopia' is pictured in moral or scientific-administrative terms . . ." ¹

* * * * *

1 "The Sickness of Liberal Society," op.cit., pp. 401-2

(b) the case against socialism

Knight has criticized both the proponents and opponents of a liberal socialist economy on the ground that they have failed to distinguish and assign the proper order of priority to the two ~~judgments~~, the mechanical and the ethical. His contribution to the debate about the possibility of rational economic calculation under socialism gives an interesting insight into his views about the relationship between the two ¹ judgments.

This debate grew out of an essay in which Ludwig von Mises, a prominent member of the Austrian subjective-value school of economic theorists, contended that a socialist economy would be unworkable because in the absence of a market for capital wealth there would be no prices of productive re-²sources, and no basis for allocating capital goods and land. Mises wrote: "If today economic calculation were . . . to disappear from production--as the result, for example, of the attainment of full socialization--then the whole structure of capitalist production would be transferred within the shortest time into desolate chaos, from which there would be no other

¹ See "The Place of Marginal Economics in a Collectivist System," American Economic Review, Supplement, March 1936. The following discussion is based mainly on the essay, "Socialism: The Nature of the Problem," (1940), Freedom and Reform, pp. 129-62

² Mises's "Die Wirtschaftsrechnung im sozialistischen Gemeinwesen," Archiv für Sozialwissenschaften, April, 1920, is published in English translation under the title, "Economic Calculation in the Socialist Commonwealth," in F.A. Hayek (ed) Collectivist Economic Planning (1935)

way out than reversion to the economic condition of the most primitive cultures. Inasmuch as money prices of the means of production can be determined only in a social order in which they are privately owned, the proof of the impracticability of socialism necessary follows."¹

Oscar Lange, a spokesman for a liberal socialist economy, argued that Mises had confused two meanings of the term "price." "It may mean either price in the ordinary sense, i.e., the exchange ratio of two commodities on a market, or it may have the generalized meaning of 'terms on which alternatives are offered to us.' . . . It is only prices in the generalized sense which are indispensable to solving the problem of the allocation of resources."²

But "prices in the generalized sense" do not involve actual exchanges and transfers of money. As Vilfredo Pareto and Enrico Barone had shown, the "prices in the generalized sense" can be determined by imputation, given a knowledge of (a) consumer tastes, (b) the supplies of the factors of pro-³duction, and (c) the technical conditions of production.

Freedom of choice in consumption and with respect to the work they do is to be allowed the citizens of the socialist

¹ Epistemological Problems of Economics (1960). This is a translation by George Reisman of the German edition of 1933.

² "On the Economic Theory of Socialism," Review of Economic Studies 1936-7, reprinted in Benjamin E. Lippincott (ed) On the Economic Theory of Socialism (1938), pp. 59-60

³ Barone's essay, "The Ministry of Production in the Collectivist State," an English translation of an Italian essay published in 1908, is included in Hayek (ed), op.cit.

commonwealth. Then two kinds of prices are to direct economic activity. Production units (the socialized firms) will sell goods and services to households. These goods and services will have money prices, and the exchanges will involve transfers of cash. Transfers of productive resources between productive units will involve only "prices in the generalized sense," only accounting prices. These are determined by the technical possibilities of substituting one commodity for another in production, that is, by the production functions. "The administration of a socialist economy will have exactly the same knowledge, or lack of knowledge, of the production functions as the capitalist entrepreneurs have."¹

Each production unit or socialized firm is instructed to follow two rules. For every scale of output average cost is to be minimized. The particular scale chosen will be one where the established price is equal to marginal cost. The rule price equal marginal cost will lead to losses in the case of falling average cost, but the marginal cost rule always takes precedence over the rule to cover average cost. Losses will be covered out of state subsidies. If prices are everywhere equal to marginal costs, the product as measured in price will be at a maximum in the sense that transfers of resources

¹ Lange, op.cit., p. 61

would then cause uncompensated losses.¹

The Central Planning Board of the Socialist Commonwealth will have the task of adjusting prices and wages to bring demand and supply for goods and services into equilibrium. It will begin with a set of "random" or arbitrarily chosen prices. But "any price different from the equilibrium price would show at the end of the accounting period a surplus or shortage of the commodity in question."² Therefore, the accounting prices fixed by the Central Planning Board would be "objective." Any error in under- or over-pricing would be indicated by the objective test of surplus inventory or depletion of inventories below the desired level.

Lange argued that Mises's doctrine, that rational economic calculation is impossible under socialism, had the effect of restricting the economic principles of rational choice between different alternatives to a particular institutional setting. "It has been maintained, indeed, by Marx and by the historical school . . . that all economic laws have only historic-relative

¹ Abba P. Lerner, The Economics of Control (1944), Chapter 11, proposes replacing the two rules, "minimize average cost for every scale of output, and make price equal to marginal cost" by the one rule, "equate the value of the marginal product of a factor to the price of that factor." He argues that the real social problem as opposed to the private capitalist's problem is one of allocating factors optimally rather than minimizing costs for a given output. Knight makes the same point in "Fallacies in the Interpretation of Social Cost." He says that the formulation of the allocation problem in terms of decreasing returns to an input is preferable to increasing or decreasing costs. The latter, he says, is "the entrepreneur's point of view, while that of either the investor or society is the inverse . . ." (Ethics of Competition, p. 223)

² Lange, op.cit., p. 82

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validity. But it is most surprising to find this institutional view supported by a prominent member of the Austrian school, which did so much to emphasize the universal validity of the fundamental principles of economic theory."¹

Knight takes the same view as does Lange in regard to Mises's logical consistency, and therefore he rejects the Mises doctrine.

The more general principles of economic theory would be valid under any conditions possible on earth, regardless of the form of society as a whole and of the social philosophy accepted in it. They would be valid in a Pharaonic dictatorship . . . That is, the general character of economic theory is not dependent on social forms or institutions or on any historical accidents . . . economic theory as such has nothing to do, one way or the other, with the problem of choice by society as a whole, either of the ends to be realized or of the general principles of the organization of the use of means in realizing them.²

Knight describes himself as "more interested in the character of economic and political thinking as illustrated by the discussion of socialism than in socialist schemes or even the general concept . . ."³ His discussion is concerned with the kind of reasoning used by both the advocates and the opponents of a socialist regime.

He claims that the opposing groups have focused on the relatively insignificant problem of "mechanical workability," while the real problem is political and moral. Mises and his supporters as well as Lange and his supporters have misunder-

1 ibid., p. 62

2 "Socialism," op.cit., p. 137

3 ibid., p. 129

stood the "nature of the problem." It "is, in the first place, political, not economic at all; and, in the second place, it is a problem of what human beings really want and/or of ideal values in relation to desires. The economist, as economist, has nothing to say about the nature of these questions."¹

Knight insists, that "economic theory, as such, involves no disproof or rejection of socialism. Rather the contrary. Theoretical analysis of the mechanism of economic organization as worked out through free exchange and free contract . . . reveals many indisputable weaknesses which could, in theory, be remedied by an all-powerful, wise, and benevolent political authority."² The question turns on the probability of such an authority, and the extent to which the citizenry would really be satisfied with its exercise, once it had been established.

The question of the desirability of socialism involves both political and economic analysis. There is a striking contrast between the two kinds of analysis. "Economic thought runs almost in terms of the obvious and commonplace, while political thought is almost as exclusively inchoate, indefinite, and inconclusive, and in consequence political thinking is a matter of wish-thinking and romanticism in overwhelming variety."³

1 ibid., p. 134

2 ibid.

3 ibid., p. 130

If the socialist commonwealth follows the views of "liberal" socialist theorists, such as Lange and Lerner, in accepting individual choices as the final criterion of economic value, if they allow freedom of choice with respect to consumption and one's role in production, then the socialist economy will necessarily be "a pecuniary organization," and "it follows that in the whole field of the final distribution of products the mechanism of socialism must be identical with that of capitalism."¹ The money income of the individual will consist of two kinds of payments. One part will be a payment for services at a level measuring the economic value of the service rendered, the amount other persons as consumers are willing to pay for the contribution made to production by the services of the particular individual. Each type of labor will receive a reward equal to the value of its marginal product. This will be supplemented by a subsidy (or reduced by a tax) to bring the distribution of income into accord with the community's principles of distributive equity.

In an equilibrated economic system, organized around the free market, whether socialist or capitalist, "there is room for social control or planning only in so far as the market machinery may fail for one reason or another to work ideally and without friction."² Knight mentions the problem of monopoly as one reason for such a discrepancy, but in accordance with his views about the relative unimportance of the problem of

1 ibid., p. 140

2 ibid., p. 149

enterprise monopoly, he doubts that it would have a significantly different form under socialism.¹

What socialists propose to do is to transfer to the political authority "the management of production and the ownership of the chief means of production."² The human beings themselves are to remain "each under his own ownership."

Knight condemns the "categorical distinction" made by socialists between property and labor incomes. The argument is substantially that discussed in connection with his capital theory. This distinction has no bearing either on economic or ethical questions. That individuals should believe it relevant is a "major problem in social psychology," one Knight believes is traceable to that "most important source of corruption in economic thinking," the labor theory of value, "an unanalyzable mixture of fallacious causal analysis and false ethics."³

As we have noted, Knight interprets the socialist theorist as basing his primary case on the ability of the socialist commonwealth to provide distributive justice, and he offers calculations to indicate the expropriation of property incomes would make only a doubtful contribution to greater equity in income distribution. He calculates that, in the mid-twenties, property incomes were about a fourth of the national income.

¹ "The idea that large-scale production is more efficient than small-scale, beyond fairly narrow limits, is another fallacy taken over into socialist theory from popular thinking." ibid., p. 143

² ibid., p. 148

³ ibid., p. 152

This was about equal to savings plus the cost of government during that period--that is, he apparently reasons that most of all taxation and the financing of capital formation came from property incomes. The most that he believed could be seized and added to labor incomes would come to about ten percent of those incomes, and against this would have to be set a greatly increased cost of government. Moreover, Knight argues that an aggressive policy of equalizing incomes would cause a drastic fall in the value of output. This would be due to "the downward revaluation of rare luxury products In general, the 'choice cuts' would fall in value much more than the ordinary ones would rise."¹ But this latter would represent a fall in purely pecuniary values. It is hard to see why this should disturb a socialist theorist, interested in a higher "real" standard of living for the masses, or why Knight should believe it at all relevant to a defense of the private property system.

But the "real problem" has to do with the character of entrepreneurship. The socialist theorists hold that "the owning entrepreneur, individually subject to loss or the recipient of gain, according to the success of the enterprise, can be replaced by the government, assumed to have no such interest, without loss of managerial efficiency." Knight says that this "surely rests more on the will to believe than it does on inference from experience. But this is not impossible; it might work out that way! It is a political or psychological

1 ibid., p. 144

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question, not one of economics."¹ In the final chapter of Risk, Uncertainty and Profit Knight argued that substitution of a collective economy for one based on concentrated private property would result in less efficiency "because men plan better when they do not feel like government officials doing things for other people, when they feel their work is their own and identify their personalities with it." (pp. 358-61) This view is not contradicted by the later idea that economists as scientists cannot condemn socialism. Knight would say that the early judgment still holds, but it is grounded on political or social psychological rather than economic analysis.

Truly relevant discussion requires taking account of economic change, "in the absence of change or the possibility of producing changes, no problem can arise, while any activity directed to change involves uncertainty as to its results and is inherently a gamble . . . An obvious consequence of the ^{un}certainty of results is that managerial activities cannot be evaluated until after they are performed . . . and most doubtfully and vaguely even then."² This is the reason for the specialization of the risk-taking function in the enterprise system. It is "the real meaning of the profit motive or principle," that uncertainty bearing is a matter of voluntary choice. But "the socialist state would have no object-

1 ibid., p. 144

2 ibid., p. 158

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ive or rational basis for fixing the remuneration of managers, the indeterminacy of their value being proportional to the degree in which they exercised initiative."¹ Therefore Knight believes that the socialist state would be most likely to ^{"revert to} the principle of leaving the remuneration of all final management . . . to be determined by the results actually realized."² The consequence of this would be to eliminate "the last important economic difference between socialism and capitalism," and therefore "all chance for any approximation to economic equality."³ Thus the final judgment:

Considering in positive terms the difference between socialism and free enterprise, the establishment of socialism would involve two general changes. The first is the appointment of the managers of business enterprise by political process and the second, the socialization, expropriation, or confiscation of private property, or whatever portion of it the socialist regime actually think it expedient to take over. All objective inquiry into the effects of either or both these changes tends to minimize their importance --except for the possibility of catastrophic loss in case the political administration should behave more in accord with the expectations of the gloomier prophets than with those of the optimistic votaries.⁴

Knight traces what he regards as the greatest confusion in socialist thought to the theorists' view that problems of individual and social life are "essentially economic. This

1 ibid.

2 ibid., p. 159

3 ibid.

4 ibid., pp. 154-5

is perhaps ultimately the most serious of the gross oversimplifications, amounting to an evasion of the main difficulties of the program from which socialist propoganda derives its plausibility and appeal."¹ The vagueness of political science allows "intelligent people" to "imagine and believe" that "the (supposed) evils of the world or in any particular society (a) are economic in basis, (b) more specifically, that they are consequences of the form of economic organization, and (c) can without serious difficulty be corrected by replacing the economic organization with a system of control by politicians."²

The only way the socialists could effect fundamental changes would be to transfer functions from the private family to the state. Whatever socialists may say, Knight believes that what they do "must largely mean, in practice, 'the omnipotent state'."³

"The abolition of ownership of productive property would by no means close all opportunity for families to strive to give their heirs a preferred position as a start in life. Many channels for such activity would remain open, but the most important would be that of politics. . . the program of socialism seems to consist primarily in transferring from business to politics the whole competitive struggle for power and the fruits of power . . . "⁴

Thus, the problem is not that of "right relations between

1 ibid., p. 139

2 ibid., p. 133

3 ibid., p. 160

4 ibid., p. 161

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given individuals," as Knight believes the socialists conceive it, but of "right individuals." It is ethical and not a mechanical problem. "Given individuals with the requisite endowment of capacity and disposition, the general principle of freedom is the only basis of ethically defensible relations among men and the essential condition of all moral or personal life calls for leaving such individuals to work out and establish such relations as they themselves deem most conducive to economic efficiency, to personal and cultural well-being, and in general to their mutual advantage in their pursuit of the good life."¹

The originality of Knight's anti-socialist argument consists in his reversing the traditional order of the "two judgments," the mechanical and the ethical. A usual case against socialism made by "bourgeois" economists of the later nineteenth and early twentieth centuries took form of granting that the blueprint for socialism embodied a noble ethical ideal, but doubting that the proposed system would ever work. The socialists asserted the "perfectibility of man," but "there was no difficulty in showing that they had not understood the nature and efficiency of the existing economic organization of society."² Mises gives what is an extreme version of this argument, the socialist economic system would be no system but a chaos.

1 ibid., pp. 161-2

2 Alfred Marshall, Principles of Economics, p. 763

Knight urges defenders of the enterprise system to turn this argument around. Grant that there is no reason why the socialist system should not work "mechanically," but question its ability to achieve its ethical goals while preserving the supreme ethical value of freedom. The case against socialism is therefore not mechanical but ethical.

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(c) alternative meanings of liberalism

A critical evaluation of Knight's libertarian ethical system naturally focuses on the fundamental idea of freedom as voluntary choice.¹ Acceptance of the conclusions of the ethical analysis turns on one's prior acceptance of the libertarian definition of freedom. However, the libertarian says that his conception of freedom cannot be discussed, because it is "the presupposition of discussion."² The contrast between freedom and coercion is the foundation of all his ethical thought, yet this contrast is said to be such that "it is impossible to state it clearly in words, or even to form a satisfactory conception of it." Nevertheless, the argument continues with the assertion that the contrast is "literally undeniable . . . the fact of discussion settles the matter."³ Only self-determining individuals are capable of

¹ In additions to Knight's writings, one can find expositions of the principles of libertarian ethics in Milton Friedman, Capitalism and Freedom (1962) and William D. Grampp, Economic Liberalism (1965), especially Vol. I, Ch. 1 and Vol. II, Chs. 1 & 3. Both these writers acknowledge their debt to Knight. Grampp traces the idea of freedom as voluntary choice back to the Stoic doctrine of the self-determination of the will. For the Stoics, he says, "goodness came to mean the way an individual chose from among different kinds of possible conduct instead of meaning the conduct itself . . . the essence of Stoic morality was the idea that goodness resides in the act of choice and not in the things chosen" (Vol. I, Ch. 1, p. 12) The work aims to show that this is the primary meaning of freedom for Locke, Hume and Smith. It is, of course, Knightian libertarianism. "The act of choice is important, not the thing chosen." (Vol. II, Ch. 3, p. 124)

² "The Role of Principles," History and Method, p. 268

³ "The Meaning of Democracy," Freedom and Reform, p. 185

discussion. The implication is that if one believes in freedom, he must accept the libertarian position; if not, he must simply leave the discussion for he has cut himself off from any possible communication with the libertarian moralist.

But men of good will who have believed themselves devoted to the preservation of human freedom would have protested the assertion that the freedom to inquire which is assumed in meaningful social discussion is identical with the freedom expressed in the choices one makes in the market place. And such differences in opinion do seem to offer an appropriate topic for discussion.

Consider the idea of freedom expressed in John Stuart Mill's essay, On Liberty.¹ Mill begins with an emphatic statement that the "Civil or Social Liberty" with which he is concerned is not the same as "the so-called Liberty of the Will."² He did not identify freedom with uncaused and uncoerced choices, or actions that are exceptions to laws of nature. There can be no question but that for Mill, as for the later libertarian moralist, the problem of freedom is posed in terms of an antithesis between the individual and the society. But Mill does not regard freedom as end-in-itself. "I forego any advantage which could be derived to my argument from the idea of abstract right, as a thing independent of utility. I re-

¹ Marshall Cohen (ed) The Philosophy of John Stuart Mill, pp. 185 & ff.

² ibid., p. 187

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gard utility as the ultimate appeal in all ethical questions." It is not utility in the sense of hedonist bodily sensations of pleasure, but "utility in the largest sense, grounded in the permanent interests of man as a progressive being."¹ The development of potentialities, which Mill believed inhered in individuals independent of social organization, required an environment in which diversity of opinion is tolerated and free discussion encouraged. "Human nature is not a machine to be built after a model, and set to exactly the work prescribed for it, but a tree, which requires to grow and develop itself on all sides, according to the tendency of the living forces which make it a living thing."²

Thus, for Mill, the fundamental freedom is not expressed in economic choices, but in freedom in inquiry.³ He believed in economic freedom, but not because of a moral quality alleged to belong to economic choice. The case for economic freedom had to be based on efficiency, ". . . it is now recognized . . . that both cheapness and the good quality of commodities are most effectually provided for by leaving the producers and sellers perfectly free . . ." This is the doctrine "of Free Trade, which rests on grounds different from . . . the principle of individual liberty,"⁴ which Mill analyzed in his

1 ibid., p. 198

2 ibid., p. 253

3 ibid., Ch. 2, "Of the Liberty of Thought and Discussion."

4 ibid., p. 295

essay. "Restrictions on trade, or on production for purposes of trade, are indeed restraints; and all restraint, qua restraint, is an evil: but the restraints in question affect only the part of conduct which society is competent to restrain, and are wrong solely because they do not really produce the results which it is desired to produce by them."¹ Questions of extending or restricting economic freedom are not moral or religious. They are questions of efficiency.

But libertarians claim that Mill's political philosophy represents a drift away from the true liberalism. He was a utilitarian, under the influence of Helvetius and Bentham.² The libertarian version of liberalism is concerned exclusively with right relations between individuals with given economic power and given tastes, while the utilitarian is accused of wanting to go beyond the conditions of choice to the quality of the choices themselves. "What counts is whether everyone is free to make choices in as rational a manner as he is capable of, together with the corollary that if a choice made by one person will affect another it must have the other's consent."³ The libertarian believes his correction of Mill is equivalent to a return to the classic liberalism of the philosophers of the Enlightenment, to the negative individualism of Locke, Hume

1 ibid.

2 Grampp, op.cit., Vol. II, p. 71. A similar point is made by Friedrich von Hayek, who attributes Mill's apostacy to French rationalist influences. Individualism and Economic Order, Ch. I

3 Grampp, op.cit., p. 124

and Adam Smith. Can he make a convincing case that libertarianism distills the essence of the classic liberalism?

In our historical review (Chapter Two) it was argued that the negative or passive individualism of the philosophers of the Enlightenment was inseparable from their faith in the unlimited potentialities of human reason. However diverse their views on particular problems, the philosophers were joined in common opposition to the Calvinist doctrine of original sin.¹ The judgment Smith approvingly quotes from Hume, about how "nearly equal all men are in their bodily force, and even in their mental powers and faculties, are cultivated by education,"² suggests the Enlightenment's faith in the possibility of indefinite improvement of man and society through education and the elimination of bad institutions. Is Knightian libertarianism derived from a similar conception of human possibilities? It seems to be more nearly the case that it comes from an opposite view. Knight explains that he finds proposals to "change human nature . . . puzzling, not to say depressing . . . The question whether 'we' either ought to or are going to change, plan or control ourselves, is one very difficult to talk about in a way that even makes grammatical sense."³ Is it likely that, from such different starting points, the social philosophies of classic liberalism and contemporary libertarianism would arrive at the same place?

¹ Ernst Cassirer, The Philosophy of the Enlightenment, p. 163

² Wealth of Nations, p. 15. The quotation comes from Hume's Essays, Moral and Political, p. 291.

³ "Economic Theory and Nationalism," Ethics of Competition, p. 301

In truth, the libertarian idea of freedom as non-discussable end-in-itself, antithetical to reform, seems altogether inconsistent with the spirit of classic liberalism. The tendency among the social philosophers of the eighteenth century was away from abstract or speculative ideals, ends-in-themselves such as "natural rights." They wished to rationalize institutional arrangements in terms of their demonstrable consequences for human well-being. Whatever principles "the writers on the laws of nature . . . set out with," said Hume, they are sure to "terminate here at last . . . the convenience and necessities of mankind."¹ In line with these tendencies, Adam Smith's "obvious and simple system of natural liberty"² is logically bound up with the "invisible hand," instrument of natural harmony.

The authentic precursors of libertarian anti-scientism were those political philosophers of the later eighteenth and nineteenth centuries who attributed the excesses of the French Revolution to the eighteenth century's exaggerated respect for human reason. Thus Alexis de Tocqueville accused that century's characteristic thinkers of placing "reform before freedom."³ The French Physiocrats, whom Smith admired as the anticipators of his "simple and obvious system of natural liberty,"⁴ Tocque-

¹ An Enquiry Concerning the Principles of Morals, Sec. II, Part II

² op.cit., p. 651

³ The Old Regime and the French Revolution (trans. Gilbert Stuart, 1st French Ed., 1856)

⁴ op.cit., Book IV, Ch. IX

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ville regarded as signaling the way down a dismal "road to serfdom." He said they believed "the function of the state was not merely one of ruling the nation, but also that of recasting it in a given mold, of shaping the mentality of the population as a whole in accordance with a predetermined model and instilling the ideas and sentiments they thought desirable into the minds of all" ¹

The remedy for these evils, according to Tocqueville, was to affirm one's faith in freedom, not as a means but as an end. "The man who asks of freedom other than itself was born to be a slave." ² So Tocqueville anticipates the essential idea of Knightian libertarianism, the idea of freedom as end-in-itself.

Knight synthesizes this idea of freedom as a non-discussable abstract right with the negative individualism of Adam Smith. In place of Smith's faith in the progress of society, under a regime of economic freedom, toward an increasing national dividend, he substitutes moral commitment to the principle of freedom as voluntary choice. The natural order becomes the association of freely choosing individuals, the "society of Crusoes."

* * * * *

As we have noted, Knight traces his libertarianism back to the ethic of Puritanism. Virtually all authorities are agreed that the "fundamental Christian doctrine of the absolute worth

¹ op.cit., p. 162

² ibid., p. 169

of the individual soul" is an important element in the development of liberalism as a social and political philosophy.¹ That this faith is not, in itself, sufficient to guarantee what most contemporary social philosophers would call a free society is indicated by the historical examples of communities which combined rigid authoritarianism with professions of devotion to "freedom of conscience," as in the Puritan theocracies of Colonial New England. Religious freedom was experienced privately and subjectively in a community exercising detailed control over the overt aspects of individual conduct.

The doctrine of the freedom of the will, defended in opposition to Calvinistic predestination, is an attempt by theologians to place this infinite valuation of the individual soul within a logically consistent theological system. For if all choices are predestined, it is unjust to hold the individual responsible for his decisions. One can rationalize a just God who punishes men for their sins only if one can have faith in the "reality of choice," the existence of genuine alternatives.

Similar reasoning was used by legal theorists to justify punishment for those found guilty of criminal activity in a court of law. Only freely acting individuals can be held responsible for their actions. In Anglo-American law the idea of "strict" or "absolute" liability has been regarded as morally objectionable.² This is the principle of holding an individual

¹ John Dewey, Freedom and Culture, p. 126

² H.L.A. Hart, "Negligence, Mens Rea, and Criminal Responsibility," Morganbesser and Walsh (ed) Free Will.

responsible for his acts irrespective of whether he intended to do them. Thus a stone falls from a tall building and injures a passerby on the street. On the principle of strict liability the individual whose activity caused the stone to fall is equally liable, whether he was a workman who accidentally dislodged a poorly cemented fragment or one who plotted to drop the stone just as the man who was injured passed along the street below.

The libertarian or voluntarist position is that culpability on the part of the actor cannot be established in the absence of evidence of deliberate intention on his part. Therefore, in addition to the "objective" facts of the crime, there is a "subjective" element to be taken into account. It was natural to characterize this subjective ^{factor} as a volition, and hold that criminal liability involves freedom of the will. It must be ascertained that the physical act--a contraction of muscles and a movement of arms and limbs--was preceded by a volition. On this ground some writers on criminal law have protested the punishment of acts due to negligence, because the negligent individual cannot be described as performing a volition prior to his failure to act. By definition, it is said, there was no mental activity accompanying his non-performance. To hold him responsible would be to proceed in accordance with the ethically odious doctrine of strict liability.¹

But when we analyze the way we actually use expressions

¹ ibid., p. 151

of moral responsibility, it turns out that inferences to private acts of volition have little to do with our judgments of blame. For suppose we are able to ascertain that an individual who performed a certain act could have refrained from performing it, so that the action was the consequence of a genuine choice. Still the character and disposition of which the choice was an expression are the products of the individual's experience, which includes all the choices he has made in the past. If he had chosen differently on previous occasions, he would not have been confronted with the particular alternatives between which he chose on this occasion. But each of his previous choices depended on his experience prior to that occasion. Therefore we can say that the choice was completely determined by a total causal factor that included the individual's habits and emotional characteristics. It does not seem reasonable to hold him responsible for these since they are largely products of a cultural environment he had little or no part in creating.

What the libertarian seeks in order to establish responsibility is not really indeterminism, but a particular kind of determinism. The problem is one of locating the efficient causes of a bodily movement--say, pushing a stone over the ledge of a tall building. Insofar as this bodily movement is completely determined by forces of the kind that figure in the laws of motion, then the actor is not responsible. The wind blew over a pole which fell on the workman and caused him to fall on the ledge and dislodge a stone. There was no precaution

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he could have taken. It was not his fault. To hold him responsible we must show that the misdeed which he was charged was not completely determined in this way, but gave him some scope for deliberation and decision-making. He could have avoided doing it. Nevertheless, even if we establish that the individual carefully plotted and carried out his act, the choices he made can perhaps be explained by psychologists in terms of the emotional and intellectual constituents of his character, and the moral problem turns on the extent to which he can be held responsible for these.

What one needs to comply with the libertarian justification of moral responsibility is an efficient cause which can be identified with an ego or self, an entity that exists independently of social and environmental influences. The act of volition is a postulated event which enables the explanation of the act to fit into the pattern of the specifications of an efficient cause. For a causal explanation links an antecedent event with a successive one, in accordance with some law. But the volition itself, even if the existence of such acts could be independently determined apart from the total situation they are invoked to explain, has no moral significance unless it is expression of power or agency, that is, unless it refers to the continuing ego. This ego is analogous to the immortal soul of theological debates, which may or may not be competent to secure its salvation through a decision. Even William James, given to much tender mindedness on

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the subject of the soul, questioned the appropriateness of the concept for discussions that aim at objective validity.¹ Under analysis, the ego tends to dissolve into memories of past experiences. It is a forbidding task to separate these transactions between a bodily organism and a social and physical environment into a part due to an independently existing ego or self, and a part due to environmental influences.

For these reasons, it seems unlikely that, when we attribute moral responsibility we are inferring to internal acts of volition performed by an ego or self. The relevant inquiry is not a search for an efficient cause. One does not look to the antecedents of the act for which the individual is held responsible. The proper concern is the consequences for future behavior of the attribution of moral responsibility. Men are held responsible and even punished for their acts because they are capable of learning. One does not punish the rock that accidentally falls on one's head, because the rock's future behavior would be unaffected by such an experience. We do punish the child who amuses himself by throwing rocks at animals or strangers, because we say he is old enough to respect the feelings of others. The relevant question is not about a previous state of consciousness--a question that, by its nature, could never be answered--but about possible and desired changes in the development of character. It is not an inquiry into the efficient causes of an act--into volitions

¹ Principles of Psychology I, pp. 180-2

or "motives as forces"--but into the qualities of character of which the act is an expression.

The enforcement of the law does not involve the morally odious absolute or strict liability so long as the court seeks to ascertain whether or not the accused individual was competent or capable of taking the normal kinds of precautions against the performance of the act. Competences and capacities are attributes of character about which even skilled judges may be mistaken, but questions about them can in principle be settled on the basis of ordinary observation and evidence. On this criterion, there is no difficulty about holding an individual responsible for negligence. A driver goes through a red light, not "on purpose" but because he was admiring the scenery in the neighborhood and did not even know there was a traffic light on that corner. Still his conduct is not excusable because the possession of a license makes him responsible for paying first attention to the operation of the car, and for looking out for traffic directions.¹

* * * * *

The concept of volition or freedom of the will is not helpful for elucidating the nature of attributions of moral or legal responsibility. The relevant inquiry is not into the "efficient causes" of acts, but into the competences of the actors. Yet the idea of voluntary choice is the foundation of Knight's general idea of freedom and therefore of his libertarian

¹ H.L.A. Hart, op.cit., pp. 162-3

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social philosophy. In order to establish that an act is free, we must show it to be undetermined by causes operating in the non-ego environment. The freedom with which Knight is concerned is that of the elusive ego or self we discussed in connection with legal responsibility. Yet careful examination of Knight's writings fails to provide any rules or method for locating this object of concern. On the contrary, the implications of his argument is that its location would be impossible.

Of course, one could never say whether someone else was acting freely for he would have no way of looking into the other's mind and observing if the act was motivated by a choice made without coercive restraint. "It is a scientific truism that an individual's motives are known only to himself; they cannot be observed by anyone else."¹ But the situation is even more hopeless than this. On Knight's definition of a free act, one would have no way of knowing, even after the fact, whether he himself chose freely. He would have to know that the choice expressed the preferences of his pre-social ego, that it was made on the basis of an independent, rational appraisal of his own interests, free from coercion or persuasion.

One might argue that he could think back to acts of choice and recall whether or not he had a sense of freedom at the time of choosing. But on the Knightian definition this would provide no evidence that the choice was free. Slaves can be made to feel free. Even the enslaved masses of totalitarian regimes are given to interpreting their bondage as a "higher

¹ "The Sickness of Liberal Society," op.cit., p. 389

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 freedom."¹ Whatever freedom may be, it is not reducible to a mere feeling. If it were, then the most expedient way of realizing^{it} might be through injections of drugs.

Knight is aware of these paradoxes. In the course of an extended discussion of freedom, he writes: "Here I want to insert rather in parenthesis that the real problem of defining freedom to my mind is the matter of distinguishing between being free and feeling free. People can be made to feel free, to think they are doing what they do from the freest possible choice when they are actually being manipulated entirely by somebody else, against their own interests or judgments. This is done by employing psychology--'making them like it', to use the vulgar phrase."² But this parenthetical remark is not the statement of an incidental difficulty. The crux of the problem is that the proposed system of classifying actions into free and coerced cannot be applied to any concrete action--not to the overt performances of others because we cannot look into another's mind or psyche, not to one's own bodily or conscious states because he can feel free and not be free.

Knight's solution of the difficulty is simply the arbitrary identification of all economic choices as free and all political action as coercive. "Government action involves compulsion--else it would not be needed . . ."³

1 Cf. Erich Fromm, Escape from Freedom, "Authoritarianism," pp. 163 & ff.

2 Intelligence and Democratic Action, p. 116

3 ibid., p. 16

But how can one maintain that his economic choices are the uncaused and uncoerced expressions of the postulated pre-social ego? Knight has often commented on the fact that the economic choices individuals feel themselves making are largely controlled by the economic system itself. So he reports his agreement with J. M. Clark's point, "that the wants which impel economic activity and which it is directed toward satisfying are the products of the economic system itself."¹ He does not believe, however, "that the economic system is to be criticized because it manufactures our wants, or because it charges as much for making them as for gratifying them . . . The development of wants is really much more important than their satisfaction; there is no poverty so deplorable as the poverty of interests."² But is the changing of tastes under the influence of the persuasive force of advertising--persuasion is a form of coercion--an expression of the pre-social individual mind? Can such an economic organization be described as an "association of Crusoes"?

A consistent application of the criterion which associates freedom with economic choice compels us to say that an impoverished widow, forced to accept employment on onerous terms in order to save her children from starvation is "choosing freely," while a community that decides to improve its public school system or beautify its park is resorting to coercion.

¹ Ethics of Competition, p. 21. He refers to J.M. Clark's essay, "Economics and Modern Psychology," Journal of Political Economy, 1918

² ibid., p. 103

Knigh is aware of these difficulties. He evidently feels them to be taken care of in the assertion that the authentic liberal position, as interpreted by the libertarian, is to take the individual with his tastes and his economic power as "given." Since freedom is the highest value, the precondition of all other values, the preservation of freedom requires a Stoic acceptance of many evils. The question is whether it is possible, even analytically, to separate economic power from the choices one makes. For the individual's tastes and the viable choices that confront him depend on the economic power he possesses. And this is the product of the institutional system, a legacy of the past.

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There is a paradox involved in making freedom, defined as voluntary choice, an end-in-itself. Libertarianism closes inquiry about a class of beliefs--those related to purposes and values--in the interests of what is held to be a higher value. The ethic of freedom takes precedence over the ethic of truth. It is argued that this is the only way the voluntary--and so moral--character of agreement on values can be secured. Social procedure--the discussion of value conflicts--implies the existence of "objective" values, else there could be no discussion looking toward a rational consensus. But there is no continuity between the objectivity of "valid values" and that of "objective facts." The validity of moral judgments is a matter of accidental meeting of minds among the discussants. "Scientists agree and the masses accept their authority without any

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coercion, while the opposite is true in the fields of jurisprudence, morals and philosophy."¹ Agreement on values is a matter of "mysterious and indescribable" communion.² It is "indescribable" because Knight believes that if the activities that make up social procedure could be described in the objective language of science, then they could be reduced to a routine and--in his terminology--"procedure" turned into "process." But the elusiveness of Knight's "valid values" is indicated by the fact that ideally free society, as Knight conceives it, allows the individual to leave the group if he does not happen to agree with the majority consensus about a value. Lacking the right to leave the group at will, the individual is said to be subject to the coercive power which defines the political.³ There are no procedures for eliminating disagreement, such as an experimental test.

Man is said to be free when he engages in free economic relations and in social procedure. Insofar he acts voluntarily, as a free moral agent. But the libertarian provides no objective criterion--indeed, denies the existence of such a criterion--for a free act. There is no way of locating the individual and his interests independently of the social factors which have molded his character and his personality. We must

1 "Salvation by Science," (1947), History and Method, p. 234

2 "Science, Philosophy and Social Procedure," op.cit., p. 217

3 In fact, individuals against whom the law is enforced, such as killers and burglars, are not usually expressing an intellectual or ethical dissent from the moral consensus about the evils of murder and theft.

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simply accept, as true by definition, the idea of economic choice as free and political action, involving enforced law, as coercive.

Yet to exempt beliefs from the control of rational inquiry is not to leave them with no grounds, but to substitute some ground other than the test of experience. The relevant grounds, according to the libertarian, are in the form of intuitive knowledge of the working of our own minds, including our "common sense" insight into "moral axioms." The "scientific dogmatist" is depicted as one who urges us to turn away from this "self-evident" or intuitive knowledge and grope blindly in a morass of empiricism.

To leave the "self-evident" character of some beliefs unquestioned is to substitute another method of fixing belief from that of intelligence as demonstrated in the methods of scientific investigation. The "method of tenacity" and the "method of personal preference" hardly seem consistent with the consensus Knight says is the basis of social life. What remains is the "method of authority." "For the mass of mankind . . . there is perhaps no better method than this . . . if it is their highest impulse to be intellectual slaves . . ."¹ It does seem to be the case that the libertarian doctrine of maximum freedom turns out, on analysis, to be erected on the foundation of an authoritarian ethic. Knight uses the idioms of the philosophies of freedom to defend an

1 Charles S. Peirce, "The Fixation of Belief," Buchler (ed) Philosophical Writings of Peirce, p. 14

authoritarian system.

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It seems that the only way to render objective the "valid values" which are the subject matter of social procedure is to relate them to overt activities. What is required is a social analogue to the experimental control over scientific theories exercised by the community of scientific investigators. Social reforms must be formulated as hypotheses, and publicly tested in the observed outcomes of processes of change. This means merging Knight's instrumental rationality with his social procedure. Or, another way of calling for this merger is to say that we must substitute a social for an individual conception of intelligence.

The scientific method which Knight, like Tocqueville, sees as a threat to free institutions is one that identifies intelligence with a primordial individual mind. The truths of moral and social life must be revealed in finished form to the individual inquiring mind that "dares to know." There is no scope for the continuing social discussion which is the fundamental feature of the open society. But the anti-scientist arguments are less impressive when directed at a conception of intelligence as social. The social character of scientific method was emphasized most effectively by Charles S. Peirce. The implications of this conception of scientific method for one's theory of a free society were worked out in the writings of John Dewey, who should be thought of as developing J. S. Mill's

idea of freedom as freedom of inquiry, Dewey's most significant alteration being the substitution of a social for Mill's individualistic conception of intelligence.

Knight criticizes Dewey's position, which he paraphrases as "we have too much discussion, too little scientific control."¹ But what Dewey condemns in the passage to which Knight refers is not discussion, but discussion unrelated to the "comprehensive plans . . . that are required if the problem of social organization is to be met."² He does not minimize "the advance scored in substitution of methods of discussion and conference for the method of arbitrary rule. But the better is too often the enemy of the still better."³ Discussion is indispensable for giving publicity to needed reforms, and elaborating the ideas contained in proposed policy measures, but it is not adequate if divorced from these policy proposals. "There was a time when discussion, the comparison of ideas already current so as to purify and clarify them, was thought to be sufficient in discovery of the structure and laws of physical nature. In the latter field, the method was displaced by that of experimental observation guided by comprehensive working hypotheses, and using all the resources made available by mathematics. But we still depend

¹ "Pragmatism and Social Action," Freedom and Reform, p. 42

² Liberalism and Social Action (1935), p. 70

³ ibid.

upon the method of discussion, with only incidental scientific control, in politics."¹

Only when instrumental rationality has been merged with social procedure can the former be useful and the latter objective.

There is evidence that Knight regards Dewey as the leading prophet of that scientism which his own social philosophy is designed to oppose. Speaking of "scientism," he says, "in philosophy, this position is known as 'positivism' and is associated with the name of Auguste Comte. The same general view is familiar in this country in the work of John Dewey . . . "² "We can only record our amazement at Professor John Dewey's contention that economics and political organization should be or could be patterned on 'science', which he takes as the embodiment of 'organized intelligence'."³ Expressing his distaste for the organized collectivism of Marx and Engels, he says: "The scientific social order advocated by Professor Dewey . . . is essentially identical except for omission of the transitional dictatorship--without replacing it by anything else . . . "⁴ It is therefore of particular interest to compare the views of Dewey and Knight.

Actually, Dewey rejects both what Knight calls scientism

1 ibid., p. 71

2 "Salvation by Science," op.cit., p. 227

3 "The Planful Act," (1944) Freedom and Reform, p. 351

4 "The Sickness of Liberal Society," ibid., p. 376

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and what he calls moralism. Dewey's rejection is based on their inconsistency with scientific method as this is applied in the developed natural sciences.

That more adequate knowledge of human nature is demanded if the release of physical powers is to serve human ends is undeniable. But it is a mistake to suppose that this knowledge of itself enables us to control human energies as physical science has enabled us to control physical energies . . . A more adequate science of human nature might conceivably only multiply the agencies by which some human beings manipulate other human beings for their own advantage . . . As I wrote some years ago, "the assimilation of human science to physical science represents only another form of absolutistic logic, a kind of physical absolutism" . . . Anything that obscures the fundamentally moral nature of the social problem is harmful, no matter whether it proceeds from the side of physical or of psychological theory.¹

The social problem is moral, but "harm has been wrought by forming social judgments on the ground of moral conceptions, conceptions of what is right and wrong, vicious and virtuous . . . this procedure inevitably prejudices the institution of relevant significant data, the statement of the problems that are to be solved and the methods by which they may be solved."²

According to Dewey's philosophy, scientism is the fallacy of taking means independently of ends, while moralism is the fallacy that moral judgments "rest upon some preconception of ends that should or ought to be attained."³ This preconception is fallacious because it "excludes ends (consequences) from the field of inquiry and reduces inquiry at its very best to the

1 Freedom and Culture, pp. 171-2

2 Logic: the Theory of Inquiry, pp. 495-6

3 ibid., p. 496

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¹ Freedom and Culture, pp. 171-2

² Logic: the Theory of Inquiry, pp. 495-6

³ ibid., p. 496

truncated and distorted business of finding out means for realizing objectives already settled upon."¹ Judgment that satisfies the logical conditions of judgment "institutes means-consequences (ends) in strict conjugate relations to each other. Ends have to be adjudged (evaluated) on the basis of the available means by which they can be attained just as existential materials have to be adjudged (evaluated) with respect to their function as material means of effecting a resolved situation. For an end-in-view is itself a means, namely, a procedural means."²

According to this view of the human condition, the evils of moralism and scientism are simply the consequence of assigning separate existences to means and ends. If the idea is active, all inquiry involves some human purpose, otherwise there is no basis for selecting this fact or that as relevant to a particular problem; while purposes or goals, if they are not idle fancies, must grow out of human experience. Means are provisional ends, ends are procedural means.

The connection of social inquiry, as to social data and as to conceptual generalizations, with practice is intrinsic not external. Any problem of scientific inquiry that does not grow out of actual (or 'practical') social conditions is factitious; it is arbitrarily set by the inquirer instead of being objectively produced and controlled . . . That which is observed, no matter how carefully and no matter how accurate the record, is capable of being understood only in terms of projected consequences of activities. In fine, problems with which inquiry into social subjectmatter is

1 ibid.

2 ibid.

concerned must, if they satisfy the conditions of scientific method, (1) grow out of actual social tensions, needs, 'troubles'; (2) have their subject matter determined by the conditions that are material means of bringing about a unified situation and (3) be related to some hypothesis, which is a plan and policy for existential resolution of the conflicting social situation.¹

According to these ideas truth is not a matter of correspondence (in some sense) with what already exists, but is prospective in its reference, dependent upon the successful out come of inquiry. "The . . . meaning of truth, of being true . . . has changed with the methods of experimental inquiry."² In an analogous way, freedom is not conceived in terms of antecedent conditions of choice--it is not an exercise of "free will"--but of the consequences of choosing. "We are free not because of what we statically are, but in as far as we are becoming different from what we have been."³

The problem of freedom is logically bound up with the potentiality of the individual for development. This potentiality is an aspect of the uniqueness of the individual. He is the product of all his particular transactions with the natural and social environment, and these transactions have determined his possibilities at a given time. But these possibilities, some of which are to be realized through more or less intelligent choices, do not exist as exceptions to

1 ibid., p. 499

2 ibid., p. 178

3 Philosophy and Civilization (1931), p. 291

scientific laws. Laws are not fiats, fatalistically predetermining biographies and histories. Laws do not refer to individuals at all, only to relations. Thus a man, a large dog, and a rock, might all weigh a hundred and fifty pounds and fall at the same rate of acceleration, but their approximate identity as mechanical objects is not inconsistent with their unique individuality in other contexts. The problem of freedom is misconceived when it is opposed to scientific determinism. Freedom is the right to realize desirable potentialities through making choices more intelligent. On this view it is out of the question to attempt a separation of freedom to choose from power to act. For how can choices be made more intelligent save through a comparison of the consequences of choice with expectations at the time of choosing? Intelligent choices, moreover, require knowledge of uniform relations of change. Predictability is a precondition of intelligent planning. Therefore, the scientific laws which state relationships do not rule out freedom, but are essential elements in the development of freedom.

Nor is the problem of freedom usefully posed in the form of an opposition between the individual and the social. Realization of potentialities for development is not to be had through isolating the individual from society. Without language, communication and the whole institutional structure, the individual is helpless, anything but free. Freedom is not the right to become a Crusoe, but the right to participate in the reform of institutions, to allow greater scope to individual initiative

and creativity. The ability to think and communicate effectively in social, economic, and moral affairs requires a careful reconstruction of institutions. The "truths" of moral and social life emerge in the discussion that accompanies this continuing process of reconstruction.

We cannot identify economic freedom with a mystical freedom to choose, isolated from power to act. We have no way of locating the pre-social ego or mind which is supposed to make the choices. But even if we could locate the chooser, economic freedom could not be regarded as the basic freedom. Rather, it is freedom of inquiry. Far from a science of society being antithetical to a free society, it is an inherent activity of such a society. The appropriate model for a commonwealth of free men is not an association of Crusoes but the community of scientific investigators engaged in the continuous process of inquiry.

"Social conditions interact with the preferences of an individual . . . in a way favorable to actualizing freedom only when they develop intelligence . . . making preference and desire more flexible, alert, and resolute. Freedom has too long been thought of as an indeterminate power operating in a closed and ended world. In its reality, freedom is a resolute will operating in a world in some respects indeterminate, because open and moving toward a new future."¹

¹ ibid., p. 298

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Knight's general views about economic policy can be summarized.

With due reservations about monopoly and the business cycle, the enterprise economy works "mechanically." It tends to realize the "natural" justice of exchange of equal values between freely choosing individuals. But the system fails to provide distributive justice, according to most ethical standards, and this is likely to be regarded as more urgent than "natural" justice.

The relationship between the two kinds of judgment, the mechanical and the ethical, can be expressed in this way. The classical economists and the utilitarian philosophers rationalized a regime of economic freedom on the basis of a doctrine of maximum satisfaction. Individuals, through free exchange, will bring about a state of affairs in which maximum satisfaction is obtained from given resources. But this argument failed to accomplish what it intended. For the maximized product is a value aggregate, and the values depend on the distribution of economic power, and the wants of consumers. Before one can rate the situation ideal, he must make a judgment about the distribution of power and the character of the individual ends. This takes one beyond the competence of the economist-as-scientist and requires invasion of the fields of ethics and aesthetics.

The error of the earlier economists was in their attempt to provide an "objective" rationalization. The correct argument

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freedom

does not present/as a means to a material end, but as an end-in-itself. The ethic of liberal individualism is the ethic of freedom. Men desire to be free because they believe they will lead fuller and more satisfying lives. But the case for freedom is not derived from individual desires. The liberal ethic holds that men "ought" to be free, whether they want to or not.

The scope for realizing alternative values, such as justice and security, is restricted by the priority that must be assigned to the preservation of freedom, the fundamental value, the precondition of all moral experience. "Moralism" and "scientism" are opposing approaches to the correction of present social ills, but Knight believes that they are alternative roads to serfdom.

The proper ethic for guiding practical affairs is the ethic of sportsmanship. The task of economists is to instruct in the logic of the rules, to show that the game of competition is a "fair" game, to restore the "moral validity of market values."¹ One of the most serious causes of the failure of the system to work effectively" is said to be "the failure of economic teaching to give even the educated public any conception of the actual workings of competition as a mechanism of control."²

"We must . . . be good sports, enjoy the game whether we

1 "Ethics and Economics Reform," op.cit., p. 60

2 ibid., ftn., p. 67

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 win or lose, not cheat even to win, and not even be too sore when the opponent wins by a little cheating."¹

* * * * *

In making freedom an absolute end, a presupposition of rather than a subject of discussion, the libertarian moralist places the most fundamental human value outside the range of rational inquiry. His system does not correct an alleged utilitarian bias toward authoritarianism. On the contrary, the libertarian takes an alternative route to an authoritarian position. He closes inquiry about desirable directions of change through his opposition of freedom to reform.

Freedom cannot be exclusively identified either with the act of choosing or with the power to put one's choices into effect. Both these relate to antecedent conditions of action, but the relevant consideration is the consequence of choice. Freedom is realized in a trend of conduct in which choices become more diversified and relate to a wider range of possibilities because they are made in the light of a more rational appraisal of consequences. If personal freedom is the power to realize individual possibilities, then it is inseparable from the right to criticize and participate in the reform of economic and political institutions.

1 "The Role of Principles," History and Method, p. 280

SIXCONCLUSION

Knight's principal concern has been to throw into relief the active, creative element in economic life. His method is to contrast two orders of existence. One is the world of inert physical processes which provides the subject matter of Newtonian science. The other is the realm of consciousness which contains man's creative mind. In the former, one finds behavior that is caused, in the latter, conduct that is motivated. This contrast between the caused and the motivated is expressed in Knight's process-procedure dichotomy. The dichotomy becomes the basis of a series of dualisms, between facts and values, means and ends, perfect knowledge and that subject to uncertainty and error, coercion and freedom, incomes that are costs and those that are profits.

Applied in an interpretation of the enterprise system, the dichotomy produces a theory of income distribution that separates the procedural activity of taking responsibility for decisions from the passive function--the "process"--of supplying productive resources. There are two parts of this distribution theory, the uncertainty theory of profit and the productivity theory of interest. The former relates the entrepreneurial function to a particular

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kind of uncertainty, that which cannot be evaluated by the calculus of probability. The latter undertakes to show that no relevant economic distinction can be drawn between broad classes of "passive" suppliers of productive resources.

To take account of the free and undetermined character of responsible decision making requires not only the reconstruction of distribution theory. More fundamentally, it involves changes in traditional Anglo-American attitudes toward the possibility of a scientific treatment of social problems. The inner life, where man exercises free will, cannot be "observed" in the same sense that interactions between physical objects in public space and time are subject to the physicist's observations. Inasmuch as human purposes make a difference in the course of events, these events are beyond the comprehension of the scientific intellect. The free will indeterminist is an anti-scientist, stressing the radical difference between the methods and purposes of the natural and social sciences.

Moreover, the essence of human freedom is held to be distilled in the idea of voluntary choice. Libertarian ethics is based on the economic theory of rational choice, its statement changed from the indicative to the imperative mood. The subjective value theorist assumes choices are free, the libertarian moralist urges that they ought to be free.

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The present study has attempted to show how Knight's ideas as a technical economic theorist, a methodologist of social science, and a moralist are unified through his conception of voluntary choice.

(1) economic motivation

Knight says that the correct psychological basis for a rigorously scientific treatment of conduct is behaviorism. According to his definition, if one adheres to a behaviorist method he refuses to bring into the analysis anything except descriptive reports of observed sequences and coexistences among objects and events. The behaviorist complies with the seventeenth century physicist's injunction to "make no hypotheses," that is, the analyst refrains from adding "interpretations" to his observations. True knowledge is that to which the mind of the investigator has contributed nothing.

However, the central methodological problem of economic science turns on the fact that the main ingredient in economic explanation, the motive of the economizer, is not observable in this sense. Motives cannot be seen, touched, heard, smelled or tasted. It seems therefore that one can offer an intelligible account of economic conduct only if he gives up pretensions to comply with the behaviorist's standards of scientific rigor.

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Knight finds his way out of this dilemma through an analysis of the methods of the physical scientist. Classical mechanics is often regarded as the model science. Yet Knight claims that the physicist also falls short of the behaviorist's standards of objectivity. He makes use in his explanations of terms like "force" and "cause." These do not refer to observed occurrences. Knight argues that they are introspected aspects of our voluntary acts, imputed to mechanical interactions taking place between the inert objects of physical nature. Though generations of physical scientists have sought to rid their science of ideas looked on as residues of primitive anthropomorphism, Knight says they have had no success. The notion of force remains indispensable. Therefore, the economist can dismiss the taunts of the "scientific dogmatist" by pointing to the example of the physicist. If the economist's method lacks scientific objectivity because of the unobservable motives that figure in his explanations, the methods of the physicist must be similarly condemned because he has been unable to offer an understandable account of mechanical interactions without imputing to sticks and stones elements of consciousness.

Knight calls his economic psychology behavioristic, but in terms of his own definitions, it is a modified behaviorism, more accurately described as "mechanistic." It does not disregard motives but treats them as analogues of mechanical forces. This approach is presented as an alternative to

the hedonist psychology some of the earlier expositors of the subjective value theory used as the foundation of their economics. Though Knight says the economist must repudiate hedonism, this is not for the reason usually given by critics of this psychology, that the hedonist conception of man is excessively "mechanical." Insofar as economics pretends to be a science, the treatment of conduct must be mechanical, for "this is what we mean by being scientific." The central concept in Knight's own economic theory is a rigorously defined economic man, Crusoe the "individualist individual," who maximizes a cardinally measurable quantity called "utility" or "desiredness." But utility is taken as an undefined term, consistent with any ends the individual may wish to pursue. It is denied that the utility the economic man maximizes can be identified with biological elements, bodily sensations of pleasure and pain.

This is the essential step in accepting individualistic voluntarism, the repudiation of hedonism or any other psychology which proposes to treat the ends of action as objects of science. Such a repudiation is equivalent to an assertion of the "reality of choice." If the alternatives between which one chooses could be replaced by a quantity which he maximizes, the act of choice would become

a mere calculation. Ethics and aesthetics could be absorbed, according to Knight, into a "glorified economics," encompassing all human interests.

Thus the mechanistic science of economics treats motives as forces, but does not inquire into their specific character. The economist is concerned only with the form of rational conduct, and not the content of the ends that motivate it. These latter are within the provinces of the independent disciplines of ethics and aesthetics. Nevertheless, though its scope is limited, economic science consists of a body of "self-evident" or "axiomatic" truths, quite similar to the truths of geometry, algebra and arithmetic. The mathematical disciplines Knight claims are empirical sciences, deductive elaborations of postulates that represent "forms of thought." The mind is said to have an affinity for certain broad pervasive aspects of reality, to lack the imagination to conceive a world in contradiction to these aspects. Among these are the mathematical properties of objects in extended space. Analogously, the conclusions of economic science are derived deductively from a postulate corresponding to the form of rational conduct, said to be known "intuitively" to any possible participant in an economic discussion. Economic science takes us as far as a scientific treatment of conduct can go, but the anti-scientist social philosopher is at pains to explain that its application is only to one

small order of reality, out of the many orders in which man has his pluralistic existence. Such a treatment leaves untouched man's being as a moral agent.

Knight's motive-force analogy was criticized on grounds that it belongs with a conception of science predating modern experimental science. The experimental scientist is not a passive receiver of sensations. Scientific observation can take place only within the context of a specified problem, and it involves systematic procedures. Scientific laws are not descriptive reports of "phenomenal sequences and coexistences." They make no reference to particular occurrences and cannot be validated by identifying their terms with sensuously recognizable objects and events. Laws are expressed in open hypothetical statements which express "habits of thought," procedures for representing matters of fact and inference tickets for moving from some matters of fact to other matters of fact. On this conception of scientific laws it makes no sense to ask the physicist, "where is a force?" Force and cause are relational concepts, the causal relationship accrues to subject matter within inquiry.

A hypothetical or conditional statement can be expressed in the form of a modality, an expression reporting not an occurrence, but a way of acting, a propensity, tendency or

disposition. Statements ascribing motives can be given a coherent explanation as analogues of scientific laws so interpreted. When we explain an act as due (say) to an individual's ambition, we are subsuming a particular act under a more or less permanent disposition or habit. We can find out about such dispositions, not indeed from some elementary sensory contact, but by systematically watching and listening to the individual over a period of time.

If human motives can be brought within science only by moving up to a level of abstraction where they become analogues of the seventeenth century physicist's forces, then the possibility of applying scientific intelligence to human problems is, as Knight claims, extremely limited. But if scientific laws are regarded as statements of "habits of nature," it seems less unreasonable to believe that the same kind of intelligence which has brought such remarkable progress within the natural sciences offers the best hope for the solution of social problems.

When an economist explains an act as due to the profit motive, he is not resorting to a kind of observation without counterpart in the developed natural sciences. He is neither introspecting his own psyche nor inferring to an efficient cause operating in the psyche of another. He is

relating an economic development to a complex of attitudes and interests acquired by players in the game of business. The changing rules and strategies of an evolving game are not discovered by reflecting on a model of primordial rationality, but by systematic observation of the players' conduct.

(2) the theory of income distribution

(a) uncertainty and profit

Knight says that uncertainty and error are the correlates of problem solving activity, while "machines do not make mistakes." In order to bring purposive activity within the competence of scientific investigation, we must abstract from liability-to-err. Perfect rationality implies omniscience. In the limit of perfect rationality, procedure turns into process and becomes amenable to analysis by the methods of science. Perfect competition is a state of affairs in which there is no uncertainty about the future, the economist's model of perfect competition is the social science counterpart of Newtonian mechanics. However, in order to eliminate occasions for problem solving activity, it is, according to Knight, not essential that all knowledge take the form of laws of the pattern, all A's are B's. Some can take the form, a proportion p of A's are B's, provided p is known with certainty. Then conduct

can be ordered with the perfect rationality consistent with perfect competition, through insurance or the grouping of risks in such a way that uncertainty about the individual instance is consistent with perfect knowledge about the class to which it belongs. If all uncertainties take the form of such measurable risks, there is no scope for thought or judgment--or even "consciousness"--and so no entrepreneurial activity.

The criticism of Knight's contrast between measurable risk and "true" uncertainty was directed at its relationship to his conception of perfect empirical knowledge, such as that conveyed by the allegedly empirical sciences of arithmetic and algebra. A priori probability rules are held to yield perfect empirical knowledge about the relative frequency of a kind of event within a larger class of events. Thus a priori probability rules are assimilated to arithmetical or algebraic principles, all being examples of perfect empirical knowledge.

We considered this argument from the point of view of the more usual distinction between analytic and empirical (i.e., refutable) propositions. A priori probability rules, relating to "ideal" games of chance, do not have any empirical content. All statistical hypotheses, including those about actual dice and coins, can never provide more than probable knowledge of a relative frequency. They must always be used subject to provisional rejection, given a sufficiently large deviation of the actual from the predicted value, "sufficiently

large" being a matter of deliberation and judgment. Probability ratios have different significances in different contexts of inquiry. However, the ability to calculate a ratio seems to be neither a necessary nor a sufficient condition for the insurability of a risk.

Our more general criticism of the uncertainty theory of profit had to do with the conception of the creative mind from which the theory derived. To identify contingency and possibility with error, and to locate them in the mind, has the effect of turning the knower into a passive spectator, in spite of the intention of the analysis, to bring out the creative character of thought.

For error applies to mistaken choices between existing alternatives or to miscalculations about an existing state of affairs. On this view, knowing is a matter of "making up one's mind," of removing error rather than actively intervening to change the course of events.

From a viewpoint consistent with modern experimental science, contingency and possibility are not "in the mind," but in the problematic situation that evokes thought. One comes to know, not when he has "made up his mind," but when he has acted to resolve an unsettled situation.

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Knight's uncertainty theory of profit is worked out as an analogue to the doctrine that correlates error with procedural activity. The economist's model of perfect competition is the social science counterpart of Newtonian mechanics. A world that could be exhaustively described in the categories of deterministic science would allow no scope for free choice and decision making. An economic system in complete conformity with the specifications of perfect competition could be comprehensively analyzed by the methods of science. But in such a system there would be no occasion for the problem solving activity which gives the entrepreneur his rationale.

The postulate of omniscience is the crucial assumption underlying the model of perfect competition. When this assumption is relaxed--and uncertainty about the future characterizes economic planning--there occurs a "cephalization" of the economic system. It acquires a "mind." However, at the level of the system, it becomes possible to specialize the decision-making functions so that the individual who makes the decisions is not necessarily the one who bears the uncertainty.

The distinctive feature of Knight's treatment is his analysis of the entrepreneurial function into the two aspects, taking responsibility and exercising control. But the argument undertakes to show that the former is the primary aspect, the one who takes responsibility exercises effective control, though he need not, and usually does not,

actually make the decisions. Since in order to take responsibility he must be able to make his guarantees effective, Knightian entrepreneurship is really a form of property ownership.

Though its purpose is to analyze the active, problem solving element in economic life, Knight's analysis has the paradoxical effect of assigning the entrepreneur, as uncertainty-bearer, a strangely passive role. An analogous criticism to the one made of the doctrine that correlates error with procedural activity applies to the conception of the entrepreneur as uncertainty-bearer. Knight's entrepreneur is not the active leader directing economic change. He is the insurer or guarantor of the "weak and timid" against the hazards of change he does not himself instigate. Though it is said that to be an entrepreneur one must possess rare qualities of judgment and intelligence, the identifiable function which corresponds most closely to it is ownership of the common stock of the modern corporation. Even here, insofar as legal provisions protect the stockholders from total loss in the event of business failure, the entrepreneurial function is not observed in pure form, but is ambiguously diffused among all the participants in the corporation--owners, creditors, workers, management, consumers. The question may reasonably be asked whether the rules of the business game provide for anyone to perform the insuring and guaranteeing function Knight associates with the entrepreneur.

(b) the nature of capital

Knight's capital theory is intended to complete the task of placing the entrepreneur at the center of the analysis of income distribution. Instead of the classical tripartite distribution, we have only the division between the allegedly "active" entrepreneur and the "passive" suppliers of all kinds of productive resources. Knight believed that this required him to show that no economically relevant distinction can be drawn between the broad classes of "passive" income recipients.

He attacks the idea that some factors of production are "original" and others "produced." In an economically meaningful sense, all are "produced," none is "productive" outside the social organization. Land and labor become resources only because of their relationship to a body of scientific knowledge and its correlated technology. Instead of resolving capital goods into labor and land, Knight says that the correct procedure is to resolve labor and land into "knowledge and capital goods." There is only one "factor of production," capital, and its most important component is knowledge.

We noted the similarity of these ideas to those expressed by Veblen in his discussion of the nature of capital. Veblen's analysis was directed against the belief that one can offer a meaningful discussion of the nature of capital and interest in terms of the function they supposedly

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perform in the economy of a presocial "solitary hunter." Questions of capital and interest are not appropriately raised in an inquiry into how primordial human nature was adapted to given "ecological" conditions of soil, climate and geography. Their proper context is an inquiry into the way society makes use of its technology to convert the energies of man and nature into productive resources. To abstract from all the "habits of thought" that belong to a particular social situation is to assume away the only circumstances to which the ideas of capital and interest could have any bearing. These are pecuniary concepts, not explicable in categories drawn from a model of primordial man's metabolism with nature.

However, Knight does not regard his "institutional" view of capital as compromising the idea that the "essential" facts about capital and interest are revealed on Crusoe's isle, the economy of the "individualist individual." So we move between two disparate universes of discourse, with no rules for translating the propositions of the one into the language of the other. The notion of "original" or unproduced resources is dismissed on the ground that nothing is "given" to the economic system, all economic value has a social context. But monetary capital and interest theories are indicted as fallacies on the ground that Crusoe, if he is to act rationally, must reckon the capital value of his resources. And though he uses no money, he requires for

the purposes of his capitalization formulas a rate of interest.

* * * * *

It is appropriate to offer a few remarks about the relevance of Knight's technical economic theory to present day economic analysis. Two of his contributions seem worthy of special note since these continue to have considerable significance.

One is the interpretation of the economist's model of perfect competition as an "ideal type." Knight was among the first to insist that this model is not properly presented as a "realistic" picture of an actual economy. Its usefulness in the analysis of economic problems often depends on its being a contrast with rather than a mirror of economic actuality. Though Knight himself remained committed to an actual "tendency toward competitive equilibrium" of the enterprise system, the model can be taken as a methodological fiction, independent of such an assumption. The analysis of the impact of monopoly can be approached with a consideration of the properties of a perfectly competitive economic order. A model of an equilibrated economic system helps throw into relief some of the causes of economic instability.

The other contribution of current importance is his stress on the bearing for economic analysis of the market participants' various degrees of knowledge about future market conditions. Much has been written about expectations

since Knight first presented his profit theory. The context of most of this later discussion is no longer the theory of distribution, but the theories of economic instability and growth. Knight has been critical of the macroeconomic analysis to which these developments belong. He should probably be understood as holding that the area of planning under conditions of uncertainty is one accessible to "intuition" rather than to the scientific "intellect." However, this later work has received stimulation from Knight's writings. For example, numerous discussions of the feasibility of replacing actual uncertain price expectations with a "certainty equivalent"--such as the mean of a probability distribution of possible prices--take off from Knight's distinction between risk and uncertainty.

(3) freedom as voluntary choice

Having considered the implications of the voluntarist theory of choice for social science methodology and the economic theory of income distribution, we concluded with a discussion of its implications for ethics and economic policy. For Knight regards the theory of rational choice as not only a scientific postulate, the basis of the empirical science of economics, it is also the foundation on which the libertarian moralist erects his ethical system. The libertarian regards economic choices as exercises of free will, and assigns these the highest moral quality. The marginal utility theorist's model of perfect competition

is a blueprint for an ideally free society, an anarchy with order but without enforced laws. In such a society, all differences of opinion about "fair" rules of association would be settled by voluntary agreement reached at the conclusion of free discussion. Social discussion is interpreted in terms of the economist's model of perfect competition. Discussion is also a form of free exchange. Therefore, economic freedom is held to be prior to all other freedoms.

We discussed a tendency observable if one follows the development of Knight's thought. The theory of individualist rational choice becomes more significant in its function as an ethical principle as compared with its function as a scientific postulate. One consequence is a difficulty in maintaining the strict separation between factual analysis and moral judgment on which Knight had insisted in his early writings.

The economist committed to the libertarian morality must necessarily experience such difficulty. His ethical convictions, which associate moral value with free and undetermined choices, involve renunciation of ambition to develop a science capable of predicting and controlling economic processes. The "positive" science that goes along with this ethical position has two divisions. There is the

theory of economic policy. This is the "dismal science" that enjoins us not to do things. The function of this division is to demonstrate the mechanical workability of the enterprise system, provided the citizenry desire and have faith in this workability. Then there is the marginal productivity theory of distribution, which gives an analysis of income distribution on the basis of the service furnished by the income recipient. This aims to demonstrate that the system provides the "natural" justice of exchange of equal values, "as you sow, so shall you reap," even though it fails to insure distributive justice in some profounder sense. The system's "ultimate" ethical justification is derived from the libertarian ethic, the "doctrine of maximum freedom."

The ability of the economist-as-scientist to apply his exercises in pure analysis to a going enterprise system depends upon the prior success of the economist-as-libertarian-moralist in persuading the citizenry of the fairness of the rules. At the same time, realization of the libertarian's fundamental ethical value of freedom depends upon the prior success of the economist-as-scientist in convincing the citizenry of the mechanical workability of the system.

The "basic difference," Knight says, between economic science and a physical science like mechanics has been overlooked, "the operation of the Newtonian principles does not depend on their recognition or acceptance by man."¹ The

1 "Social Science and the Political Trend," Freedom and Reform, p. 26

physicist does not devote himself to persuading physical objects to obey the law of gravity. But in the case of economic science one finds a complicated interrelationship between the belief that its principles are true, and the fact that they are true. The economist concerned with the preservation of a regime of economic freedom cannot neglect his educative function. He must persuade the public that the system is mechanically operational, he must inculcate a belief in the reasonableness of the business-versus-charity principle and the "moral validity of market values." "A 'science' of human behavior . . . must describe ideal and not actual behavior, if it is addressed to free human beings expected to change their own behavior voluntarily as a result of the knowledge imparted."¹

Our criticism of the libertarian ethical system centered on the libertarian conception of freedom, which we compared with another conception. The two meanings of freedom correspond to the two conceptions of the creative mind we have compared throughout the study. According to the pluralist position Knight holds, the phrase, "the idea is active" means that truth is relative to purpose. "Reality is not what is logical, but what it suits our purposes to treat as real."² The pluralist seeks to establish a right-to-believ

1 "Economic Theory and Nationalism," Ethics of Competition, p. 278

2 "Economic Psychology," op.cit., pp. 94-5

even in defiance of reason, in order to free action from an inhibiting intellectualism. On this ground he argues that there are moral and aesthetic truths non-comparable with but equally as valid as scientific truth. The libertarian conception of political and economic freedom is developed within this system of ideas. The problem of human freedom is one of protecting the freely choosing individual mind from the scientific intellect. The methods of science are said to be instrumental to the exercise of power but antithetical to the voluntary character of decisions that must be made about the purposes for which power ought to be used.

Economic choices are said to be free, but beyond this definition, there is no "objective" criterion for a free act. Though the fact of human freedom is said to be "undeniable," it is "indescribable" in objective language, "not discussable because it is a presupposition of discussion." One is accused of debasing freedom if he attempts to argue its value by showing it instrumental to other values. Freedom is an end-in-itself. The libertarian opposes political authority--all political power is held to be coercive. Yet, since his fundamental ethical principle of freedom is placed outside the competence of logical analysis, he conducts his opposition from a position that can only be described as ethical authoritarianism. In

consequence, it would be possible for a society to maximize freedom as the libertarian defines it, yet be a tyranny on other at least equally plausible conceptions of freedom. For example, the libertarian ethic can be used to justify acquiescence in ruthless exercises of economic power.

According to the second conception of the creative mind, to say "the idea is active" means that knowing is an activity. Human purposes are involved in the discovery of truth, but truth is not adaptable to purposes. If knowing is an activity, there is no "immediate knowledge" to which we refer to validate our beliefs, the warrant of truth is prospective instead of retrospective. On this view, just as there are no pre-cognitive "immediate data of consciousness," so there are no "indefinables" like the libertarian moralist's "freedom." Meaningful ideas must be related to other ideas, and their meanings developed in discourse and through use in inquiry.

From this point of view, the moral basis of an open society is not an ethic of freedom as end-in-itself, but an ethic of truth. This is the ethic that joins together the community of scientific investigators, for the obligation

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to tell the truth is a condition for the public testing of hypotheses.

If individual freedom is conceived in terms of the power to realize individual possibilities, then political freedom consists in the right to criticize existing institutions and to participate in their reconstruction. The social science analogue of experimental science is a social technology, related to an experimental morality. It is to the community of scientific investigators and not to Crusoe's shipwreck isle that one must go to find the blueprint for a free society.

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