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INTELLECTUAL REVOLUTIONS IN MODERN ECONOMIC THEORY: JOAN ROBINSON'S CONTRIBUTIONS AND CHALLENGES

George R. FEIWEL

Abstract: Joan Robinson, who died in 1983 after a prolonged illness, was one of the truly great and controversial economists of (what George Shackle called) the age of high economic theory. She was an astute theoretician in the tradition of the Cambridge school of political economy. She was gifted with remarkable intuitive and analytical powers and an exceptionally logical mind. She was fired with the enthusiasm of the Schumpeterian 'creatively destructive' innovator and pursued a relentless quest to get the logical argument right. She believed that the success of economics depends more on insight than precision and that its affinity must be with history as much as with mathematics. Like Keynes, she thrived on controversy.

Joan Ribinson was a truly great economist of the vintage years of (what Professor Shackle called) high economic theory. She enriched to a remarkable degree both economic theory and political economy. She creatively participated in many of the major upheavals in the economics of our age. She died on August 5, 1983 shortly before her eightieth birthday (October 31, 1983). She left an imperishable and incalculable scholarly legacy and fond memories of the person and scholar she was. With the progress of the science and art of economics, perceptions of her achievement (and of the relative merits of specific contributions) will continue to differ, and will perhaps alter. Novertheless the broad picture is one of an economist that will live ferever. One can only hope that future generations of economists will be inspired to emulate her and explore the profound questions she raised with such perspicacity, perspicuity and persistence. Economics, like any scientific subject, lives by its unsolved problems. What matters is who are the students attracted to it, why are they attracted to it, what do they do, and how do they go about it.

Joan Robinson was a Cambridge economist par excellence, with all the strengths and limitations of this rich and influential tradition. As an economist her fate was linked both to the ascendancy of the Cambridge school and to its subsequent decline. With the postwar relative decline of British economic and political power, the ascendancy of America and the concomitant explosion of the

economics profession, the intellectual dominance of Cambridge-on-the-Cam was displaced by Cambridge, Mass. The latter became the center of a new synthesis of neoclassical (micro) and Keynesian (macro) economics and the 'setter' of performance criteria for economists. This is not to say that Cambridge, Mass. has ruled economics. There were always critics and 'competing schools'. For a variety of reasons (into which we cannot delve here), the challenges to Cambridge, Mass. have for a number of years become more vocal and intense. Our purpose here is to present the Robinsonian challenge and to she light on some major intellectual developments in contemporary economics. Needless to say, the confines of space force selectivity and prevent treatment of the many subjects as fully as they deserve.

Reflecting on her life's work and on that of others during that time, in a soul-searching essay, provocatively entitled 'Thinking about Thinking', she (1979a, p. 110) observed that she never had her early pamphlet *Economics is a Serious Subject* (1932) reprinted

> because I soon ceased to believe in its main argument—that if economists could avoid certain bad habits and arrive at a consistent set of assumptions, however abstract, they could approach reality step by step merely by making more complicated models.
>
> I soon realized that to avoid unacceptable methods of argument is a necessary but not a sufficient condition for establishing a genuine discipline. But some of the negative points in the essay still seem to be valid forty years after it was written. One of those points concerns controversy among economists.
>
> I hold very strongly that the purpose of economic theory should be to try to throw some light on the world that we are living in... It should proceed by advancing hypotheses which are in principle refutable. But to sort out the questions to be discussed it is often necessary to pass through a phase of purely logical, *a priori* argument—intellectual experiment—before hypotheses can be formulated. (Joan Robinson, 1980, p. ix)

Speaking about her own work, Joan Robinson (1978, p. xxii) mused that during her fifty years or so of scholarly writing, she had 'aimed to bring theoretical analysis nearer the actual problems of economic life instead of further away from them'. She (1979a, p. 1) considered that the reason much economic theory ends up in a blind alley is because it does not originate from actual economic problems. In the 1930s economic theorizing was not a purely intellectual movement.

> In fact it arose out of the actual situation of the thirtics—the breakdown of the world market economy in the great slump. Kalecki, Keynes, and Myrdal were trying to find an explanation for unemployment; the exploration of imperfect and monopolistic competition set afoot by the challenge from opposite directions, of Piero Sraffa... and Allyn Young... to the orthodox theory of value, though it proved to be a blind alley, arose from the observation that, in a general buyers' market, it could not be true that prices

> are equal to marginal costs. The movement of the thirties was an attempt to bring analysis to bear on actual problems. Discussion of an actual problem cannot avoid the question of what should be done about it; questions of policy involve politics (laisser-faire is just as much a policy as any other). Politics involve ideology; there is no such thing as a 'purely economic' problem that can be settled by purely economic logic; political interests and political prejudice are involved in every discussion of actual questions.

Furthermore, she (1978, pp. 63–64) considered that

> the element of propaganda is inherent in the subject because it is concerned with policy. It would be of no interest if it were not. If you want a subject that is worth pursuing for its intrinsic appeal without any view to consequences you would not be attending a lecture on economics. You would be, my, doing pure mathematics or studying the behaviour of birds...

Samuelson (1977, p. 890) noted that when he entered economics there were three great waves: the Keynesian revolution, the imperfect (monopolistic) competition revolution, and the 'fruitful clarification of the analysis of economic reality resulting from the mathematical and econometric handling of the subject'. Joan Robinson was a creative participant (as a member of Keynes's Circus) and a generalizer of the first and one of the two independent (and complementary) architects of the second. Her position in the third is ambivalent. While she was innocent of modern mathematical techniques and showed some hostility towards their use in economics her own theoretical writings (especially her major prewar (1933) and postwar (1956, 1966) books) are very formalistic and abstract. She casts her argument in what may be called the axiomatic method, even though she is tinged with the 'Marshallian incubus' in execution.

On the one hand she had the extraordinary ability to zero in on the heart of the matter and in a few well chosen words to convey its essence and, on the other, her exposition sometimes lacks the necessary numerous qualifications that should accompany such useful oversimplifications. There is also an irritating penchant to dismiss as nonsense ideas with which she did not agree. She had a great affinity for language. She wrote clearly, concisely and with elegance. Interspersed throughout her writings are jewels of perception, written with wit and sharply to the point.

A further clue to the paradox of Joan is that she matured as an economist at a time when literary economics was just about to be displaced by the third wave, the mathematization of economics and increasing fascination with sophisticated mathematical techniques. At the same time the Marshallian mode of thinking (in which she was steeped) was being displaced by the increasing dominance of modern Walrasian general equilibrium and the increasing role of the game theoretical approach. In the latter part of her life, prestige of performance criteria shifted in her disfavour. In such an environment and with her prickly character and penchant for disputes, it is not surprising that, despite its relevance and intrinsic appeal to idealistic or questioning youth, her work did not always attract the best and brightest. But this tale has many other facets. Her conception of

economic processes is not very conducive to adaptation in mathematical models.

There was Joan Robinson who initially was fascinated by economic theory as an essentially tool-making process ('the subject matter of economics' is neither more nor less than its own technique' (Joan Robinson, 1932, p. 3)), and who later in life revolted against developing a fully-fledged alternative theory to neoclassical economics on the grounds that it would only be another box of tricks. She stressed that what economic theory needs now is a different way of thinking: 'to eschew fudging, to respect facts and to admit ignorance of what we do not know (1979, p. 119). There was Joan, the challenging critic, asking profound questions, but often providing no more than hints to answers. She said of Myrdal (whom she admired) that he saw problems more clearly than solutions and of Sraffa that he was far more negative than positive. The same could be said of her.

There was Joan Robinson, the great Marshallian, trying to escape Marshall's moralizing and fudging, who broke out of the 'Marshallian incubus' and wrote the neoclassical, tool-making *Economics of Imperfect Competition* in Pigovian tradition, inspired by Sraffa's pregnant suggestions and sacrilgious questionin of Marshall.

When Joan Robinson arrived in Cambridge in 1921 as a student 'Marshall was economics' and his '*Principles* was the Bible' (Joan Robinson, 1973b, p. ix).

She came to study economics as many others without a clear idea of what it was about. She had some hazy notion that economics would help her understand the reasons for poverty and the means of alleviating it. She also hoped to find in economics greater scope for rational argument than is history—her school specialization. 'I was somewhat disappointed on both counts'. She reacted badly towards Marshall: 'I felt smothered by the moralizing and mystified by the theory' (Joan Robinson, 1978, p. ix).

On clue to the economics of Joan Robinson is that she was a great Marshallian while she fought tooth and nail to escape from Marshall, particularly in his Pigovian incarnation. To her Marshall was a subtle thinker, with many valuable ideas, but in a terrible muddle. She (1979a, pp. 53–54) saw Marshall as in a way an heir of the classical tradition. He concentrated on a recognizable economy in a specific phase of its development, where recognizable classes of the society interact within a specific legal and conventional framework.

> Marshall inherited from Ricardo two qualities which are lacking in the branch of the neo-classical school that derives from Walras. He had (though confusedly) a sense of time. The short period is here and now, with concrete stocks of means of production in existence. Incompatibilities in the situation—in particular between the capacity of equipment and expected demand for output—will determine what happens next. Long-period equilibrium is not at some date in the future; it is an imaginary state of affairs in which there are no incompatibilities in the existing situation, here and now. Secondly, Marshall had a sense of the structure of society. His world is peopled with types (though idealized in a way which nowadays sometimes

> seems comical) who have different parts to play—the businessman, the worker, the householder—each has his own characteristic motives and problems. (Joan Robinson, 1965, 1975, p. 101).

But she (1979, p. 12) adds that the trouble with Marshalls analysis is that it 'was half in historical time and half in equilibrium analysis'. In her (1973b, p. ix) opinion there was a deep-rooted conflict in Marshall's *Principles*. It was a conflict of which Marshall was 'uneasily' aware, especially in connection with increasing returns. The conflict lay between the analysis, couched in purely static terms, and the conclusions drawn therefrom—conclusions that apply to a dynamic economy, developing through time. But 'somehow we managed to swallow it all'.

In a recent essay (1979a, p. 55), provocatively entitled 'Thinking about Thinking', she reflected:

> My first publication, in 1932, was devoted to the methodology of economics. It was a small pamphlet called *Economics is a Serious Subject*. This was during what Professor Shackle has called the years of high theory when it seemed that 'imperfect competition' was going to revolutionize the analysis of prices and when the discussions that brought Keynes from the *Treatise on Money* to the *General Theory* had already begun.
>
> It seemed, at the time, that economics was emerging from the long sleep of laisser faire doctrines, 'marginal products' and equilibrium under Say's Law and that it was an important subject, dealing with urgent problems. The title of my essay, however, turned on a pun. It opens as follows:
>
> > The student's heart sinks when he is presented with a book on the Scope and Method of his subject. Let me make a start, he begs, and I will find out the scope and method as I go along. And the student is perfectly right. For a serious subject, in the academic sense, is neither more nor less than its own technique.
>
> I never had the pamphlet reprinted because I soon ceased to believe in its main argument—that if the economists could avoid certain bad habits and arrive at a consistent set of assumptions, however abstract, they could approach reality step by step merely by maing more complicated models.
>
> I soon realized that to avoid unacceptable methods of argument is a necessary but not a sufficient condition for establishing a genuine discipline.

There was Joan Robinson who at times showed a remarkable grasp of the grand conception of general economic interdependence and asked searching questions about the limitations of Walrasian general equilibrium theory, while she sometimes downgraded its historical achievement.

Actually Joan Robinson was a 'second-hand' Marshallian. She was inculcated Marshall by Pigou. It is the 'Pigovian orthodoxy' she fought. In her (1978, p. 132) view 'Pigou emptied history out of Marshall and reduced the analysis to a two-dimensional scheme'. Pigou attempted to solve Marshall's above-mentioned quandry by introducing the equilibrium size of the firm.

Joan Robinson (p. 131) compares the economics of the classics and neoclassics,

in a way drawing a parallel between Marshall and Pigou. In her perception, the classics (and to some extent even Marshall)

> were concerned with actual contemporary problems and put their arguments in terms of the structure and behaviour of the economy in which they were living, while the neoclassics enunciated what purported to be universal laws, based on human nature—greed, impatience and so forth. The latter rarely say anything at all about the kind of economy to which an argument is to be applied. The suggestion is that the same laws which govern the supposed behaviour of Robinson Crusoe are equally valid for the conduct of Gosplan, or rather for what its conduct *ought* to be, and for analysing the vagaries of Wall Street.

In her words (1933, 1969, p. xiii):

> In general I have endeavoured to build on the foundation laid by Marshall and by Professor Pigou. This is a debt which all economists owe, and which may be taken for granted. I have for the most part referred to their works only where I believe that I have detected them in errors of detail.
>
> Here she (p. xiii) also acknowledges Sraffa 'as the fount from which my work flows, for the chief aim of this book is to attempt to carry out his pregnant suggestion that the whole theory of value should be treated in terms of monopoly analysis'.

In 1958 recollecting the birth of imperfect competition, Joan Robinson (1960, 1975, pp. 239-240), points to Sraffa (1926) as shaking the foundations of orthodoxy.

While she acknowledged Sraffa's inspiration, Joan Robinson (1933, 1969, p. xiii) attributed to Richard Kahn a degree of co-operation close to co-authorship:

> The whole technical apparatus was built up with his aid, and many of the major problems—notably the problems of Price Discrimination and of Exploitation—were solved as much by him as by me. He has also contributed a number of mathematical proofs which I should have been incapable of finding myself.

The theory of imperfect competition was propelled into existence by a notion that was in the air in Cambridge, but was yet in a nebulous state. It was the notion that each firm encounters a declining demand curve for its product and that profits are maximized at the point where marginal revenue equals marginal cost. This notion shed light on situations where firms could function below capacity and yet be profitable.

When Joan Robinson's 1933 book appeared it was reviewed by Schumpeter, a colleague of Camberlin (1933), Schumpeter (1934, p. 251) acknowledged 'that we owe substantial progress to the works of all the theorists of imperfect competition, among whom Mrs. Robinson in this book establishes a claim, certainly to a leading, and perhaps to the first, place'. With a more than thirty-year perspective, Shackle (1967, p. 53) places the book as one of the important accomplishments of what he calls 'the years of high theory'.

> The care and thouroughness of her statement of definitions and assumptions, the candour of her declaration about the abstract character of her analysis, the systematic organization which lets us know these things at the beginning and offers a formal explanation and training in the pure technique of average and marginal curves without, at that stage, giving these curves any specific content or interpretation, were at that date something new in economic reasoning. Mrs Robinson was a navigator, not a mere groping breaker of the jungle.

Joan Robinson (1933, 1969, pp. 2–3) is emphatic about the analytical economist's obligation to unequivocally set forth the assumptions on which his analysis is based. Here, but for her innocence of mathematics, she could be classed as a devotee of the axiomatic method.

> The best that the economist can do is to use what implements he has with the greatest care and precision, and when he does give an answer to some general question to take the utmost pains to make clear what assumptions about the nature of the problem are implicit in his answer. If... the assumptions are very abstract the economist will only bring the practical man into confusion and himself into disrepute by allowing him to suppose that the question which is being answered is the same as the question which is being asked.

She (1932, p. 8) castigated her follow English economists for

> never giving a proper account of their assumptions. The search for Marshall's hidden assumptions has occupied a whole generation, and almost threatened at one time to turn the English economists into a school of higher-critical theologians. The economist who does not state his assumptions correctly, or does not state them at all, is a cause of great trouble to his colleagues.

She (p. 8) attributes 'the prevalence of this vice' partly to optimism 'which leads them to concentrate on the technique and leave the assumptions to look after themselves' and partly to 'duplicity, which leads them to hope that no one will notice quite how unreal their assumptions are'. But there is also some humility involved here. The economist suffers an 'agonising sense of shame' when confronted with practical questions that he can either tackle by making assumptions closer to real conditions, but cannot answer with the tools at hand, or that he can answer by making quite unrealistic assumptions that he buries in footnotes and would be ashamed to expose to the critical eye of the practical man. This, however, is a 'scandalous breach of faith with the practical man'. (Joan Robinson, 1933, 1969, pp. 2–3)

The concluding paragraph of *The Economics of Imperfect Competition* (p. 327) sums up the spirit in which it was written:

> The level of abstraction maintained in this book is distressingly high. The technique can only survive in an atmosphere rarefied by the adoption of very severe simplifying assumptions. The reader who is interested in results immediately applicable to the real world has every right to complain that these tools are of little use to him. The knives are of bone and the hammers of

> wood, only capable of cutting paper and driving pins into cardboard. But the analytical economist who is prepared to work stage by stage towards the still far-distant ideal of constructing an analysis which will be capable of solving the problems presented by the real world may perhaps find in this tool-box some implements which will serve his turn.

Interestingly Joan Robinson (pp. 20–21) is troubled by partial analysis and yearns for something more general, though she does not carry this out. Similarly, she is troubled by complications introduced into the individual demand curve by the problem of advertising, but, again unfortunately, does not pursue this topic. She recognizes the perplexing problem of oligopoly, but as she later admitted she did not know how to tackle it.

Perhaps the last part of *The Economics of Imperfect Competition* is the most original, in the sense of being quite different from Chamberlin (1933), and the most important, in the sense of vision and continuity of Joan Robinson's life work. In later years, she (for example, 1979, p. 114) was fond of stressing how delighted she was to have shown that wages do not equal the marginal productivity of labour. Whether or not this was one of her chief objectives at the time is not now easily disentagnled from time-distorted perspectives. Robinson (1933, 1969, p. 11) finds 'the temptation to stray from the path of analysis and to offer reflections of a moral character... too strong to be resisted'. The concluding chapter is a foray into welfare economics.

In 1953, after serving a short time on the Monopolies Commission, Joan Robinson (1960, 1975, p. xii) 'felt impelled to revisit imperfect competition'. She not only offered a searching criticism of her first *magnum opus*, but also an insightful perspective of the developments in the decades. She increasingly felt that the method she had used was flawed.

Joan Robinson (1960, 1975, p. 233–234) recalled that 'it was in connection with slump conditions that the imperfect-market analysis was evolved.' However, 'it now appears much too simple, and oligopoly, price leadership and a feeling for "playing the rules of the game" have to be brought in to supplement it.' As she saw it in 1974 (1979, p. 155), imperfect competition was an attempt 'to reconcile the principle of profit-maximization with under-capacity marking'—an attempt criticized as unrealistic. But she (p. 114) does not consider the work altogether wasted 'because, over the bridge of Kalecki's "degree of monopoly" it led on to the modern theory of the determination of profit margins and so was linked up with the theory of employment'.

Whether or not the almost simultaneous publication of Chamberlin (1933) with her own book (1933, 1969) was a dismaying shock to her, Joan Robinson made little attempt immediately afterwords or at any other time to differentiate her product from Chamberlin. Whether this was from the lofty ideals of scholarly integrity or because she was by then much preoccupied by the ferment of ideas surrounding the birth of the General Theory is another question.

Keynes concentrated his attack on the macroeconomic failure of the system, but

did not challenge the established price and distribution theories. Yet he (1936, p. 292) also complained of the dichotomy in traditional teaching between the so-called Volume I of Principles of Economics concerned with price theory and Volume II concerned with theory of money.

> So long as economists are concerned with what is called the Theory of Value, they have been accustomed to teach that prices are governed by the conditions of supply and demand; and, in particular, changes in marginal cost and the elasticity of short-period supply have played a prominent part. But when they pass in volume II, or more often in a separate treatise, to the Theory of Money and Prices, we hear no more of these homely but intelligible concepts and move into a world where prices are governed by the quantity of money, by its income-velocity, by the velocity of circulation relatively to the volume of transactions, by hoarding, by forced saving, by inflation and deflation *et hoc genus omne*; and little or no attempt is made to relate these vaguer phrases to our former notions of the elasticities of supply and demand.

At the time the standard Pigovian teaching was that, under competitive conditions, the firm produces output at the level where marginal cost equals price as long as the latter exceeds average prime cost. Therefore, any operating plant is operating at full capacity. Yet during the depression almost all plants were operating below capacity while prices were not falling to equal prime cost. Joan Robinson (1979, p. 188) reports that the concept of marginal revenue was introduced as an explanation of this phenomenon, but Keynes did not use it. He brought in the idea of 'user cost' (loss of value of equipment when it is used rather than remaining idle) as a means for reconciling the concept of competition with the empirical evidence that even during a depression a profit margin was a part of the supply price. This idea did not catch on and did not become part of the post war Keynesian tradition.

Thus Keynes's attitude towards received price theory was ambivalent. Indeed as Shove quipped, the trouble with Keynes was that he did not take the half hour necessary to master the theory of value.

Réflecting on the puzzle that the imperfect competition revolution had no bearing on the Keynesian revolution when both of them took place at about the same time and at the same place and both involved at least some of the same *dramatis personae* (Kahn, Robinson, and Sraffa), Tobin (1981, p. 207) notes

> Keynes's uncritical acceptance of the neoclassical competitive model. By assuming that firms are price takers in auction markets rather than price setters in monopolistic competition or oligopoly, he made it harder to sustain his vision of persistent disequilibrium, with failures of coordination, communication, and adjustment. Imperfect competition was the other revolution in economics in the 1930s; one of its sites was Keynes's Cambridge, and two of its agents, Joan Robinson and Sraffa, were in his group. Yet for some mysterious reason the two revolutions were never meshed.

In contrast to Keynes, Kalecki was not at all exposed to the academic teaching

of the perfectly competitive model. Although he sometimes used perfect competition in exposition, when he did so Kalecki (1971, p. 158) usually warned that it is

> a most unrealistic assumption not only for the present phase of capitalism but even for the so called competitive capitalist economy of past centuries: surely this competition was always in general very imperfect. Perfect competition when its actual status of a handy model is forgotten becomes a dangerous myth.

Surely Keynes was aware of the imperfections of competition in the real world, nevertheless in *General Theory* he chose to battle orthodoxy on what he considered the most important grounds, disregarding the theory of value.

One of the differences between Keynes and Kalecki is that the latter aimed at prividing a macrodistribution theory on firmer foundations of a more plausible theory of the firm; in bringing the strength of the forces of market imperfection, or degree of monopoly (a term he later regretted), in touch not only with the mode of behaviour and pricing policy of the firm and process of price formation in an industry, but in incorporating forces of market imperfection in this model of the economy as a whole; and in demonstrating that the intensity of the degree of monopoly is pertinent to the determination of distributive shares and thus closely tied in with the theory of effective demand and Kalecki's conception about the typical state of underutilization of productive resources in modern capitalist economy.

To build a realistic theory, Kalecki explained how industrial prices are formed by mark-ups on costs and distinguished between 'cost-determined' and 'demand-determined' prices. The intensity of the 'degree of monopoly' (together with other distributional factors) is a key for the determination of macrodistribution. The distributional factors are essentially pertinent to effective demand and to fluctuations in aggregate output and utilization of resources. Kalecki's theory of profits is based on the principle that wage-earners do not save, but spend what they get, and that entrepreneurs get what they spend. Thus entrepreneurs' profits are governed by their propensity to invest and consume and not the other way round. His model not only describes a wider range of economic phenomena, but also presents the economic process in motion (i.e. how one sequence develops from the preceding ones). The model encompasses long-run dynamics, the capacity effects of investments, and some supply considerations. This model privides a starting point for understanding the contemporary problems of simultaneous occurrence of inflation and recession.

II

There was Joan Robinson, political economist *par excellence* in the best Cambridge tradition, who was inspired and enthused by the unique experience and opportunity of participating in Keynes's Circus and who became a formative

figure in the Keynesian revolution. There was Joan who increasingly perceived the Keynesian revolution through Kaleckian eyes. Loyal to Keynes her mentor, she increasingly reinterpreted his great teaching in the Kaleckian mode.

There was Joan Robinson, the contributor and interpreter of the Keynesian revolution on the theoretical plane, who incessantly sought to go beyond the *General Theory*; to generalize it into a long-term theory of employment and to 'open' it to an open economy.

In the book that was the Magna Carta of the Keynesian revolution, Keynes (1936, p. 249) depicted his contemporary capitalist economy:

> In particular, it is an outstanding characteristic of the economic system in which we live that, whilst it is subject to severe fluctuations in respect of output and employment, it is not violently unstable. Indeed it seems capable of remaining in a chronic condition of sub-normal activity for a considerable period without any marked tendency either towards recovery or towards complete collapse.

Though theoretically unarmed Keynes's basic vision of the capitalist economy could already be discerned in the *Consequences*. This vision was crystallized in a popular 1934 BBC discussion that appeared in the *Listener* (Keynes 1973, pp. 485–492) of which some excepts are very enlightening:

> On the one side are those who believe that the existing economic system is, in the long run, a self-adjusting system, though with creaks and groans and jerks, and interrupted by time lags, outside interference and mistakes... These authorities do not, of course, believe that the system is automatically or immediately self-adjusting. But they do believe that it has an inherent tendency towards self-adjustment, if it is not intefered with and if the action of change and chance is not too rapid.
>
> On the other side of the gulf are those who reject the idea that the existing economic system is, in any significant sense, self-adjusting. They believe that the failure of effective demand to reach the full potentialisties of supply... is due to much more fundamental causes (pp. 486–487).
>
> The strength of the self-adjusting school depends on its having behind it almost the whole body of organized economic thinking and doctrine of the last hundred years. This is a formidable power (p. 488).
>
> Now I range myself with the heretics. I believe their flair and their instinct move them towards the right conclusion. But I was brought up in the citadel and I recognise its power and might. A large part of the established body of economic doctrine I cannot but accept as broadly correct. I do not doubt it. For me, therefore, it is impossible to rest satisfied until I can put my finger on the flaw in that part of the orthodox reasoning which leads to the conclusions which for various reasons seem to me to be inacceptable. I believe that I am on my way to do so. There is, I am convinced, a fatal flaw in that part of the orthodox reasoning which deals with the theory of what determines the level of effective demand and the volume of aggregate employment; the flaw being

largely due to the failure of the classical doctrine to develop a satisfactory theory of the rate of interest (p. 489).

Now the school which believes in self-adjustment is, in fact, assuming that the rate of interest adjusts itself more or less automatically, so as to encourage just the right amount of production of capital goods to keep our incomes at the maximum level which our energies and our organization and our knowledge of how to produce efficiently are capable of providing. This is, however, pure assumption. There is no theoretical reason for believing it to be true (p. 490).

Even as things are, there is a strong presumption that a greater equality of incomes would lead to increased employment and greater aggregate income... At present, it is important to maintain a careful balance between stimulating consumption and stimulating investment... The right course is to get rid of the scarcity of capital goods—which will rid us at the same time of most of the evils of capitalism—whilst also moving in the direction of increasing the share of income falling to those whose economic welfare will gain most by their having the chance to consume more.

None of this, however, will happen by itself or of its own accord. The system is not self-adjusting, and, without purposive direction, it is incapable of translating our actual poverty into our potential plenty (p. 491).

Whatever else needs to be said about the Keynesian revolution in macroeconomics and monetary theory and its various interpretations, it undermined the myth that full employment is the normal state of the economy. It focused on the seriousness of the macroeconomic failure of the system, on the sources of real disturbances, on the opportunities for improvement, on effective demand as a central problem, on the possibilities of underemployment equilibrium with involuntary unemployment, on the possibilities for economies to get stuck in unsatisfactory equilibrium, on prolonged period of underemployment equilibrium or persisting disequilibrium, and on the fallacies of the classical saving-investment-interest rate mechanism and the doctrine of full employment via flexible wages and prices and of the classical policy presecrptions in general.

The Keynesian revolution means different things to different people. In essence it refers to the impact of the theory of the determination of the level of aggregate output and employment. It underscores the dependence and impact of the level of effective demand on the degree of utilization of labor and capacity. It provides the analytical innovation of the consumption function. It focuses on expectations in an uncertain world in general and on marginal efficiency of investment and speculative liquidity preference in particular. It cogently distinguishes between the acts of saving and investment and the problems of offsets to saving. It emphasizes, inter alia, the fluctuations in total investment demand (and its dependence on shifts in expected profitability, which in turn depends on fairly unpredictable dynamic factors and subjective psychology and is beneficially influenced by a reduction of uncertainty about the future when the economy is steadily working in

high gear) as a source of macroeconomic instability.

As Keynes (1936, p. viii) stressed in the preface, the writing of the *General Theory* has been for him 'a long struggle to escape from habitual modes of thought and expression'. The difficulty in comprehending the argument lies not in the novelty of the ideas, which in themselves are quite simple, but in escaping from the traditional ones 'which ramify, for those brought up as most of us have been, into every corner of our minds'.

As we know, Joan Robinson played a major role in the Circus where the ideas of the *General Theory* were thrashed out before they were written. She also was a major participant in its explication, reinterpretation, extension, and generalization. Here roles as contributor, interpreter, critic, and innovator of this historical achievement are inextricably interwined. They are reflected in all of her post-General Theory work and only partly in the often fascinating correspondence of Keynes that has survived and been preserved in Keynes's Collected Works. In final analysis, it is not important what particular idea originated with her or what her specific contribution was, even if it could be detected. It was the unique opportunity of participating in this great creative effort and the circumstances of the time that branded her for a lifetime. Whether what in later years she saw in Keynes was always there, and whatever the other influences at work she remained a great Keynesian for the rest of her life.

Keynes's *Treatise* (1930) was barely published when he began rethinking his ideas and moving in a new direction. A group of young economists (Richard Kahn, James Meade, Joan and Austin Robinson, and Piero Sraffa), known as the Circus, began to meet to discuss the basic issues. Little of their discussions has survived in written form, so much so that some economists disparage the importance of their discussions in clarifying Keynes's ideas and helping him write the *General Theory*. Kahn (the chief spokesman, or as Meade called him the 'messenger angel,' for the Circus in its relations with Keynes) feels he should not enter into personal controversy because 'it would be unseemly to appear to be making a case for my friends and myself'. Fortunately in the last decade or so the members of the Circus have gotton together and written up their reminiscences of that glorious time (see Keynes, 1973, pp. 337–343) and separate accounts have also appeared (see Kahn, 1984, pp. 105–111; Joan Robinson, 1978, pp. xi–xvi; A. Robinson, 1977; Kahn, 1985; A. Robinson, 1985).

To the question of who provided the ingredients of the *General Theory*, Sir Austin Robinson, 1985 (p. 57) answers:

> I think the Circus put together *some* of the ingredients. But many of the ingredients were there already and Keynes was aware of them. He only had to be reminded of them. It was not we who created the ingredients. We reminded him that he could not build a satisfactory theory *unless* these ingredients were included. That is where I believe we made our contribution.

Kahn (1985, pp. 43–44) recalls that in writing the *General Theory* Keynes was in a hurry and relied on the Circus for theoretical scrutiny and substantiation:

> To secure conviction, he relied on sincerity and commonsense. He could display his skill at advocacy without arousing the resentment displayed by many of his academic colleagues. When it came to the more precise logic of the *General Theory* he had to demand from his readers the abandonment of firmly ingrained theoretical ideas. Keynes, the propagandist, 'was always forging ahead of the author of theoretical works. Indeed it was his zest as a reformer that set the pace for the writing of the *General Theory*.

Keynes's attitude towards the circus is well described by Kahn (1985, p. 49) who wonders at the magnanimity with which Keynes received his regular weekly reports of Circus debates, doubts, and tentative conclusions:

> Keynes might well, had he been a lesser man, have been unreceptive. He was in fact the very opposite. He picked up our ideas, incorporated them in his own thinking and went ahead. And he asked me to take suggestions for further discussion back to the Circus. But it did not occur to any of us that we were doing more than adding glosses and embroideries to Keynes's work. Any further advance was made by Keynes.

Joan Robinson (1978, p. xi) recalled that from early 1931 until the completion of the *General Theory* 'I was involved, along with Kahn, in a continuous series of discussions, writings, lectures and correspondence around the development of Keynes' ideas'. She also admitted that Sraffa was secretly sceptical about the new ideas. She (pp. xii–xiii) recorded that among the topics discussed was Austin Robinson's point about the fallacy of the widow's cruse under unemployment. 'This was the first step from the theory of money to the analysis of output' described in her 1933 article on money and output (see 1978, pp. 14–19). Another topic was modification of the definitions in the *Treatise* and clarifications of some confusions between accounting identities and causal relationships. Other topics included normal profits and the 'buckets-in-a-well' fallacy and confusion between a flow of income and stock of wealth. In her reading of *Collected Writings of John Maynard Keynes* she (1979, p. 170) commented on the upheavals and reformulations that led away from the *Treatise* to the *General Theory* and noted that there were 'moments when we had some trouble in getting Maynard to see what the point of his revolution really was'. In the end, however, when he summarized his views after the publication of the *General Theory* he got the point into focus.

Joan Robinson's interpretation of the *General Theory* has shifted in time. Increasingly in the postwar period it has become more Kaleckian than Keynesian consciously or unconsciously. In final analysis it matters little, for her interpretation and extensions have the Robinsonian flavour.

> In so far as it is possible to summarize a complex system of thought in a few words, we may say that the essence of Keynes' theory is as follows: an unequal distribution of income sets up a chronic tendency for the demand for goods to fall short of the productive capacity of industry. Those who desire to consume have not the money to buy, and so do not constitute a profitable market. Those who have the money to buy do not wish to consume as much

as they could, but to accumulate wealth, that is, to save. So long as there is a sufficient demand for new capital investment (in houses, industrial equipment, means of transport, growing stocks of goods, etc.), savings are utilized, and the system functions adequately. But saving in itself provides no guarantee that capital accumulation will take place; on the contrary, saving limits the demand for consumption goods, and so limits the demand for capital to produce them. Booms occur when there are profitable outlets for investment. Long periods of prosperity could occur in the nineteenth century when there were large opportunities for profitable investment in exploiting new inventions and developing new continents. Pseudo-prosperity occurs in war-time because war creates unlimited demand. But prosperity is not the normal state for a highly-developed capitalist system, and the very accumulation of capital, on the one hand by increasing wealth and promoting saving, and on the other by saturating the demand for new capital, makes prosperity harder to attain.

Thus crises appear, not as a superficial blemish in the system of private enterprise, but as symptoms of a deep-seated and progressive disease. Though Keynes' theory arose out of the problem of unemployment, it has many other applications. It has proved invaluable in the analysis of post-war inflation. It has revolutionized the theory of international trade. And it has implications, not yet fully worked out, which undermine the traditional academic theory of the long-run supply of capital and of the distribution of the product of industry between labour and capital.

Academic theory, by a path of its own, has thus arrived at a position which bears considerable resemblance to Marx's system. In both, unemployment plays an essential part. In both, capitalism is seen as carrying within itself the seeds of its own decay. On the negative side, as opposed to the orthodox equilibrium theory, the systems of Keynes and Marx stand together, and there is now, for the first time, enough common ground between Marxist and academic economists to make discussion possible. In spite of this there has still been very little serious study of Marx by English academic economists.

A part from political prejudice, the neglect of Marx is largely due to the extreme obscurity of his method of exposition. There are two serious defects in the Marxian apparatus, which are quite superficial in themselves, and can easily be remedied, but which have led to endless misunderstandings. (Joan Robinson, 1951, 1978, pp. 136–137)

Joan Robinson (1960, 1975, p. 1) contrasted the attitudes of Marx, Marshall, and Keynes towards capitalism. Oversimplifying, Marx was the revolutionary socialist who tried to explain the system in order to destroy it. Marshall was the complacent defender of capitalism who tried to make it palatable by presenting the system in an agreeable light. Keynes was the disillusioned defender of capitalism who tried to find the system's failure in order to find the means to save it from self-destruction.

Further, she (p. 12) warned that it is foolish to refuse to learn from an economist whose ideology one disapproves. It is equally imprudent to adopt the theories of another whose ideologies one favours. For economic theory is at best only a hypothesis. It merely suggests plausible explanations of some economic happening. It cannot be considered correct until confronted with facts. The task of the disciple of a great economist is not to propagandize his doctrine, but to test his hypothesis. If the hypothesis is disproved it must be rejected. It is of no use to choose an hypothesis by the colour of the economist who puts it forward and then to reject the facts that do not agree with it.

> Each of our three economists is concerned with describing the rules of the capitalist game, and therefore with criticizing or defending them. Marx shows that the rules are unfavourable to the workers, and for that very reason will not be tolerated for long. Marshall argues that the rules are framed in such a way as to produce the greatest possible growth of wealth, and that all classes benefit from sharing in it. Keynes is showing that the rules need to be amended so as to ensure that wealth will continue to grow.
>
> The description and the evaluation cannot be separated, and to pretend that we are not interested in the evaluation is mere self-deception.
>
> Marx is quite clear about his purpose. He is on the side of the workers and he makes the case against capitalism in order to encourage the workers to overthrow it.
>
> Marshall was not openly and clearly on one side or the other in the clash of interests between workers and capitalists. His case is rather that if everyone will accept the system and not make a fuss about it, all will benefit together.
>
> > In regard to sectional interests. Nearly all of them are changing their character and becoming increasingly plastic: but the chief change is the assimilation of the training, and consequently the capacity, of the working classes generally to those of the well-to-do....
> >
> > We are indeed approaching rapidly to conditions which have no close precedent in the past, but are perhaps really more natural than those which they are supplanting—conditions under which the relations between the various industrial strata of a civilized nation are being based on reason, rather than tradition.... It is becoming clear that this and every other Western country can now afford to make increased sacrifices of material wealth for the purpose of raising the quality of life throughout their whole populations.
>
> Keynes is against waste and stupidity and unnecessary poverty. He is not so much interested in who gets the benefit of increased production, as in making sure that it takes place. He regards a greater equality of income as desirable but his attitude is 'moderately conservative' and he holds that if only capitalism could be made to function efficiently it would be better than any alternative.
>
> The burden of Marx's propaganda is that capitalism is pernicious and

should be destroyed; of Marshall's, that it is beneficial and should be preserved; of Keynes', that it could be made fairly tolerable if people had a little sense.

Each of the three is trying to justify a particular view of the system and so is making propaganda for it. But each has sufficient faith in his own view to believe that the truth will bear him out, and each is trying to make a genuinely scientific approach to economic problems. They cannot help being propagandists, but they are scientists as well. To learn from them we first have to see what it is that they are driving at. Then we can make use of them as scientists while reserving the right to have our own opinion on questions of politics. (Joan Robinson, 1978, pp. 64–65)

Keynes's model was constructed to tackle the causes and consequences of the variations in the rate of employment and utilization of existing capacity taking place with fluctuation of effective demand. Keynes recognized that in a capitalist economy the price level is primarily governed by the level of money wages, with rich implications for the postwar economies. Keynes took it for granted that in a modern capitalist economy wages are set in terms of money. He 'brought the argument down from the cloudy realms of timeless equilibrium to here and now, with an irrevocable past, facing an uncertain future.' In a monetary economy, money enters the argument as the proverbial link between the present and the future. The *General Theory* is a monetary theory 'only in the sense that relationships and institutions concerned with money, credit, and finance are necessary elements in the "real" economy with which it is concerned' (Joan Robinson, 1971, pp. 89–90).

Joan Robinson (1979a, p. 170) emphasized that on the plane of economic theory 'the revolution lay in the change from the conception of equilibrium to the conception of history; from the principles of rational choice to the problems of decisions based on guess-work or on convention'. She reinterpreted Keynes with her own views of time, history, and uncertainty. To a student of modern mathematical economics this has the flavor of the imperfect information revolution and bounded rationality.

For Joan Robinson (1979a, p. 210) the expression 'post-Keynesian' applies to a mode of analysis that takes into account the difference between the future and the past. She (1978, p. x) perceived Keynes as instinctively recognizing 'the nature of historical time in which today is an ever-moving break between the irrevocable past and the unknown future', but he did not articulate this point until after the publication of the *General Theory*. 'Once we admit that an economy exists in time, that history goes one way, from the irrevocable past into the unknown future, the conception of equilibrium based on the mechanical analogy of a pendulum swinging to and fro in space becomes untenable. The whole of traditional economics needs to be thought out afresh' (Joan Robinson, 1979a, p. 172).

Marshall's analysis was half in historical time and half in equilibrium doctrine. It is the first half that can pass the test of *a priori* plausibility and

provide a starting point for a 'theory of the firm' appropriate to an economy of private enterprise.

Keynes developed his analysis in the setting of a short-period situation with given productive capacity and training of labour. This was appropriate to his problem: the influence of the level of effective demand on the utilization of resources already in existence. He had to concentrate upon forcing his readers to admit that there was such a problem. He was concerned with investment primarily as the source of instability and, apart from some quite conventional remarks, he did not have much to say about the process of accumulation either for firms or for nations. (Joan Robinson, 1979a, p. 12)

Marx never succeeded in completing his great plan. The last two volumes of *Capital* are compilations from his notes, not fully worked out and to some extent confused and inconsistent. It has often been suggested that the reason why Marx was held up was because he could not find a way through the contradiction between his hypothesis and the facts around him.

On the question of the standard of life, Marshall's theory stands the test of experience better than Marx's. But Marshall's theory also contained a fatal flaw. The unemployment of the inter-war period revealed the crack in his system which Keynes penetrated in order to explode it.

Marshall, like Marx, failed to complete the great three-volume work that he projected. Like Marx, he himself saw the weak spot in his own theory. His whole argument depends upon the beneficial effect of accumulation. But abstaining from present consumption in order to save is not the same thing as adding to the stock of capital. Marshall was aware of this flaw in his system, and anticipated Keynes' exposure of it.

> But though men have the power to purchase they may not choose to use it. For when confidence has been shaken by failures, capital cannot be got to start new companies or extend old ones.... Other trades, finding a poor market for their goods, produce less; they earn less, and therefore they buy less: the diminution of the demand for their wares makes them demand less of other trades. Thus commercial disorganization spreads: the disorganization of one trade throws others out of gear, and they react on it and increase its disorganization.

The chief cause of the evil is a want of confidence. The greater part of it would be removed almost in an instant if confidence could return, touch all industries with her magic wand and make them continue their production and their demand for the wares of others.... But the revival of industry comes about through the gradual and often simultaneous growth of confidence among many various trades; it begins as soon as traders think that prices will not continue to fall: and with a revival of industry prices rise.

Here is the germ of the theory to account for crises and chronic stagnation with which Keynes exploded Marshall. Perhaps Marshall, like Marx, was frustrated by seeing the contradiction in his theory without being able to see a

way through it.

The inadequacy of Keynes' doctrine does not lie in an inconsistency in the theory but in its narrow range. Keynes is discussing the problem of unemployment in a developed economy where there is productive capacity already in existence and all that is needed is a profitable market for its potential product. He is trying to find a cure for the diseases that beset wealthy nations. His argument throws little direct light on the problems of a country which suffers from a lack of productive capacity or on the kind of unemployment (which Marx deals with) that arises from having too little capital to be able to offer work to all available labour. It is of no use to apply Keynes' prescriptions in situations which they do not suit. Where lack of productive capacity is the problem, merely generating demand only leads to inflation, and expenditure for its own sake—building pyramids instead of railways—is clearly not what the situation demends.

In short, no economic theory gives us ready-made answers. Any theory that we follow blindly will lead us astray. To make good use of an economic theory we must first sort out the relations of the propagandist and the scientific elements in it, then by checking with experience, see how far the scientific element appears convincing, and finally recombine it with our own political views. The purpose of studying economics is not to acquire a set of ready-made answers to economic questions, but to learn how to avoid being deceived by economists. (Joan Robinson, 1978, pp. 74–75)

We must admit that every economic doctrine that is not trivial formalism contains political judgments. But it is the greatest possible folly to choose the doctrines that we want to accept by their political content. It is folly to reject a piece of analysis because we do not agree with the political judgment of the economist who puts it forward. Unfortunately, this approach to economics is very prevalent. (Joan Robinson, 1960, 1975, p. 6)

But what has become of Keynes? Joan Robinson (pp. 172–173), the critic of modern economics, strongly disagreed with the mainstream merger of Keynesian and neoclassical economics.

On the plane of the development of ideas, the main point of the General Theory was that it broke out of the theological system of orthodox axioms; Keynes was looking at the actual situation and trying to understand how an actual economy operates; he brought the argument down from timeless stationary states into the present, here and now, when the past cannot be changed and the future cannot be known.

At the time it seemed like a revolution; a new day had dawned in which economics was going to be a serious subject concerned with serious problems. But the day soon clouded over. After 1945, Keynes' innovations had become orthodox in their turn; now governments had to admit that they were concerned with maintaining the level of employment; but in respect to economic theory the old theology closed in again. Keynes himself began the

reconstruction of the orthodox scheme that he had shattered. 'But if our central controls succeed in establishing an aggregate volume of output corresponding to full employment as nearly as is practicable, the classical theory comes into its own again from this point onwards.... It is in determining the volume, not the direction of actual employment that the existing system has broken down.' He had been too much occupied with immediate problems to think very much about what the neoclassical theory (which he called classical) really entailed. In some moods he found capitalism morally and aesthetically abhorrent but his object was to save it from destroying itself; he did not press his criticism either of the system or of its apologists very deep. In particular he did not distinguish between profitable in vestment and socially beneficial investment, and he was rather averse to considering problems connected with the distribution of income between families in an industrial nation (the problem of distribution of income in the world had not yet come into fashion).

A new orthodoxy was soon established by a simple device. A substitute for Say's Law was provided by the assumption that a well-managed Keynesian policy keeps investment running at the level which absorbs the saving forthcoming at full employment. The rest of the doctrines of the neoclassics could then be revived.

The neo-neoclassics, however, seem to have overlooked some serious inconsistencies in the old scheme which made the new synthesis unsatisfactory. (Joan Robinson, 1971, pp. x–xi)

In conclusion, in 1973, in her presidential address to Section F. British Association, Joan Robinson (1979a, p. 177) has complained that 'the Keynesian revolution still remains to be made both in teaching economic theory and forming economic policy'. And some years later, she concluded a paper on employment policy (with F. Wilkinson) with these poignant words (1979a, p. 208):

It is ironic that after the great technical achievements brought by the age of growth, all we are offered is a return to large-scale unemployment and poverty in the midst of plenty, in an age of frustration. Kalecki was right to be sceptical; the modern economies have failed to develop the political and social institutions, at either domestic or international level,,that are needed to make permanent full employment compatible with capitalism.

Kalecki stresses, far more than Keynes, the political element in all economic developments and he brings into the centre of the argument the classical question, which Keynes was inclined to smooth over, of the division of the produce of the earth between the classes of the community.

Where Keynes has the concept of a 'psychological propensity to consume' which determines the amount of expenditure on consumption goods out of a given national income, Kalecki divides total income into wages and gross profits. Wages are consumed as they are received; total profits are derived from gross investment and rentier consumption. 'The workers spend what

they get and capitalists get what they spend.'

Keynes's analysis of the relation of the price level to the level of money-wage rates was based on a vague Marshallian conception of competition. Kalecki took imperfect competition into account. The ratio of gross margins to direct cost, in manufacturing industry, tends to be lower the more intense the competition between firms. The overall *share* of gross profit in value added depends on the 'degree of monopoly', while the *amount* of profit realised over a year depends upon capitalists' expenditure. All kinds of reservations and complications can be introduced into this model, but its simple form displays the essential relationship between the principle of effective demand and the distribution of income.

Perhaps it was for this reason that Kalecki's version of the theory was smothered in a conspiracy of silence in the USA, while Keynes's was accepted and, in a garbled form, incorporated into current teaching. Both were holding a mirror up to modern capitalism, but Keynes's mirror was somewhat misty while Kalecki's was too bright for comfort. (Joan Robinson, 1978, p. 8)

III

During the decade of the fifties, in Cambridge, the Keynesian revolution was being consolidated and expanded. Already before the war, Kalecki, Kaldor, Harrod and Keynes himself had made important criticisms and advances on the original formulation. The General Theory of Employment was a growing and variegated body of thought, richer and wider than the book of that name. A new phase began when Harrod's *Towards a Dynamic Economics*, in 1947, threw out a challenge to develop a Keynesian analysis of accumulation in the long run.

In 1952, I published a 'Generalisation of the General Theory', this soon seemed unsatisfactory and I allowed the volume in which it appeared (*The Rate of Interest and Other Essays*) to run out of print.

The main programme during this period was to go beyond Keynes and develop a long-run analysis 'which has freed itself from the need to assume conditions of static equilibrium'.

> Generalization of the *General Theory* was an attempt to treat the analysis of accumulation according to Keynes' prescription. I worked out the internal relationships of a capitalist economy in steady growth—a golden age—omitting the large fields of foreign trade and government action which, however, are susceptible to be treated in the same manner. I used it as the background to analyse departures from it—that is to study the effect upon a growing economy of various types of vicissitudes that it may meet with. This propounds no doctrines but maps out a large area of the problems that should be investigated in the light of contemporary history. I still believe that something on these lines is a necessary preparation for 'applying our formal principles of thought' to economic reality. (Joan Robinson, 1979b, pp.

ii–xviii)

The road to *Accumulation of Capital* was pared with the difficulties of translating the conception into an analytical structure and with replacing the toolbox she initially used (for example, she ultimately abandoned her ingenious use of the concept of elasticity of substitution that she (1933, 1969) introduced (see also Kahn 1933; Hicks, 1983, pp. 313–326)). While her presentation of the argument might be clearer in her 1952 essay (pp. 67–164), her treatise (1956, 1966) is a much more satisfactory exposition. Though masterful in many ways, in others this book (1956, 1966) falls short of the mark.

The Accumulation of Capital is a great work in the classical tradition. Probably a more descriptive title would have been 'Accumulation, Distribution, Effective Demand, and Employment'. It concentrated on the large classical, Keynesian, and Kaleckian themes.

The Accumulation of Capital abounds with innovative ideas. Among them are her treatment of history and time (an attempt to present a historical model) and in this treatment her important distinction between differences and change. As she (1956, 1966, p. 71) pointed out:

> Throughout the argument it is necessary to distinguish *differences* from *changes*. The effect of having had in the past, and continuing to have, say, a higher rate of accumulation or a higher degree of monopoly, is not the same as the effect of a rise in the rate of accumulation or of an increase in monopoly. The analysis if threfore conducted in terms both of a comparison between economies with permanently different characteristics and of a single economy in which a change takes place at a moment of time.

Joan Robinson has intuitively developed what is essentially a linear programming approach and does remarkably well with her own toolbox. However, there is a grain of truth in Klein's (1958, pp. 623–624) observation that she was 'insular in her intellectual outlook and horizon'. He muses that had she gone into the modern development in linear programming, input-output analysis, mathematical general equilibrium system, and theory of balanced growth she would have achieved her results more generally and more directly. She would then not have been restricted to two sectors, but could have achieved full generality in an n-sector system by using input-output models and more general multi-dimensional mathematical systems. She could also have avoided with greater ease much of the index number problem by forging on from the simple aggregative to more general systems. Fairness, however, requires us to observe that had she been familiar with all those modern developments and been a practitioner of mathematical techniques, she might have been inhibited in the development of the essentially original aspects of her model (especially her handling of historical time). Also, one cannot overstress that for her a model that is neatly expressed and rigorously formalized might lose its economic significance (for example, her objections to Findlay's mathematization of her model (1965, 1975, p. 48) and to Kalecki's formalization of the investment function and her preference for 'animal spirits' and the major role it

plays in her conception.

The Accumulation of Capital is a very abstract and formalistic book with at least one foot (if not more) in the mainstream and in that respect it is not entirely unlike *The Economics of Imperfect Competition.* The criticism levelled against the formalism of this book (1956, 1966) is partly due to misunderstanding. She starts with the mythical world of the golden age, but her very purpose is to descend to the vicissitudes of the capitalist economy as she so clearly articulates in her 1952 essay. The road by which she descends into the real world is not smooth, nor is it entirely analytically satisfactory. There are many virtues in models that articulate the requisite conditions for states that never have occurred and never will occur as long as they elucidate (as Joan Robinson does) the conditions needed to achieve such a state and the absence of these conditions in the real world.

Joan Robinson clearly states her assumptions at the very beginning of the book. Indeed, she stresses the unrealism of the heroic assumptions she makes. It is not cricket to take her to task for mistaking her mythical golden age with full employment, for the real world. Her strategy, as that of others is to formulate first the stringent conditions required for steady growth which she identifies as a mythical state of affairs not likely to obtain in any actual economy.

Joan Robinson was a great model builder who fully understood the need to simplify drastically. ('In order to know anything it is necessary to know everything, but in order to talk about anything it is necessary to neglect a great deal' (Joan Robinson, 1951, 1978, p. 42).) Like many other model builders she suffered from the gulf between her perception of the realities and her ability to articulate this in simplified terms, with imperfect techniques. It is ironic, however, that she showed considerable intolerance of others following the model-builder's path.

However remarkable its novelty, analytical pointers and the pearls of wisdom with which it abounds, in the *Accumulation of Capital* Joan Robinson did not succeed in meeting several demanding objectives in her grand design. She did not succeed in integrating the various streams of analysis and in truly generalizing Keynes's short-period analysis into long-run development. Neither did she succeed in integrating growth and fluctuations, nor did she provide a complete alternative theoretical structure to the neoclassical construct she tried to dislodge. *The Accumulation of Capital* enriches our knowledge about the nature and working of the capitalist economy and articulates an alternative conception, but it does not provide a full fledged theory. What it does provide is a wealth of pointers and ingredients for constructing such an alternative theory, while shedding a light on the difficulties that can be expected in meeting this demanding objective.

The Joan Robinson of *The Accumulation of Capital* was a great model builder, who fully understood the need to simplify drastically and was accused of unnecessary abstraction. There was the Joan of the very formalistic book with at least one foot in the mainstream, who seethed with new ideas and concentrated on large themes, but whose execution fell short of the mark in articulating her

conception of the vicissitudes of the capitalist economy.

There was Joan Robinson who criticized economic theory for being far removed from reality, abstract, formalistic, esoteric, and all that, while Joan, the theorist, committed similar sins. She was hypercritical of the pervasive concept of equilibrium in economic theory, while she herself used it to advantage in *The Accumulation of Capital.* She was particularly critical of the drawing of practical conclusions from equilibrium analysis, which she did not do. By concentrating on long-run growth equilibrium only, Joan Robinson rules out 'the more fundamental question what process of causation might be held conceptually responsible for the establishment and persistence of any particular Golden Age' (Kahn, 1959, p. 149). Thus the problem of getting into equilibrium, that is, the formidable question of stability, is not encountered in this context.

IV

For Joan Robinson (1977a, p. 57) 'the long wrangle about "measuring capital" has been a great deal of fuss over a secondary question. The real source of trouble is the confusion between comparisons of equilibrium positions and the history of a process of accumulation'.

The notorious and often recondite Cambridge-Cambridge controversy transgresses the theory of capital and involves the whole corpus of economic theory and underlying ideologies. 'It is understandable that strong convictions should lead to strong language, as any reader of the "capital controversies" can document in quantitative detail, author by author' (Samuelson, 1977, p. 141). The last word has not been said on what the shouting is all about, what the principal issues of controversy and central questions of theory are, and what is the appropriate methodology.

Clearly the personalities of the chief combatants—(i) the so-called Anglo-Italian offense (led by Joan Robinson, Kaldor, and Pasinetti, and inspired by Sraffa), and (ii) the MIT Institute Professors (Samuelson, Solow, and Modigliani, but also including 'residents' of Cambridge-on-the-Cam, Hahn and Meade)—matter, but much more is at stake. As Samuelson (1977, p. 113) acknowledged: 'Behind an esoteric dispute over "reswitching" or heterogeneity of capital there often lurk contrasting views about fruitful ways of understanding distributional analysis and affecting its content by alternative policy measures'. She (1973a, p. 114) admitted that the drawn-out controversy may seem 'as more scholasticism, yet it has important implications both for the formation of ideology and for understanding the world we are living in'.

> The controversies over so-called capital theory arose out of the search for a model appropriate to a modern western, economy, which would allow for an analysis of accumulation and of the distribution of the net product of industry between wages and profits (Joan Robinson, 1978, p. 114).

Joan Robinson reminisces about the early stages of the discussion on long-run

growth in the Keynesian tradition which was spurred by the publication in 1949 of Harrod's *Towards a Dynamic Economics*. Whatever the shortcomings of the latter, 'he also lacked a rate of profit'. She acknowledges that it was not till she found the 'corn economy in Sraffa's *Introduction* to Ricardo's *Principles* that I saw a gleam of light on the question of the rate of profit on capital' (1978, pp. xvi–xvii). She (1960, 1975, pp. 114 and 130) fixed the first round of the capital controversy in 1953 by stating:

> The dominance in neo-classical economic teaching of the concept of a production function... has had an enervating effect upon the development of the subject, for by concentrating upon the question of the proportions of factors it has distracted attention from the more difficult but more rewarding questions of the influences governing the supplies of the factors and of the causes and consequences of changes in technical knowledge.

And further:

> When presented with the task of determining the distribution of the product of industry between labour and capital, the neo-classical production function comes to grief (even in the most perfect transquility) on the failure to distinguish between 'capital' in the sense of a command over finance.
>
> When presented with the task of analysing a process of accumulation the production function comes to grief on the failure to distinguish between comparisons of equilibrium positions and movements from one to another.

Twenty years later she (1978, p. xvii) quipped that in this first round she was 'innocently remarking that the Emperor had no clothes'.

Solow (1955–1956, p. 101) responded by praising Joan Robinson for being annoyed by some of the practices of academic economists. 'We have reason to be greateful for her annoyance, for she seems to have written her article the way an oyster makes pearls—out of sheet irritation'. He went on to show that only in a very narrow class of cases can one sum up the various capital inputs in a single index-figure, so that the production function can be 'collapsed' to give output as a function of inputs of labour and capital-in-general.

Joan Robinson (1979a, p. 116) recalled that when she fired her 1953 salvo, she was still naive. She believed that if she asked a reasonable question, she ought to get a serious answer. She was quite surprised at the indignation that her question aroused. She became the butt of such jokes of Solow's 'everybody in the profession, but Joan Robinson, knows perfectly well what capital means'.

Reflecting on her role in the development of the controversy, Joan Robinson (1982, p. 91) recalls that she

> set about to dismantle the neoclassical production function by introducing what I called a book of blueprints showing the concrete stock of means of production required for each level of output with a given labour force. From this developed what Professor Solow called a pseudo-production function... I do not think I ever misused it as Professor Samuelson does

> nowadays, but it certainly took me a long time to understand its meaning and its limitations.

And elsewhere:

> The pseudo-production function consists of the specification of a set of mutually non-inferior techniques, each requiring a particular stock of means of production per man employed. Each is eligible for at least one rate of profit, and none is superior to the rest at every rate of profit. When the techniques are listed in order of the flow per man employed of a homogeneous net output, it can be seen that a higher output is not necessarily associated with 'more capital', that a technique that is eligible at a higher rate of profit may require a larger value of capital at the corresponding prices, and that the same technique may be eligible at widely different rates of profit. This killed off the doctrine of 'marginal productivity of capital' associated with the production function (though it has refused to get buried), but it does not, by itself, provide the basis for an alternative analysis of accumulation. If techniques are invented, one after the other in historical time, there is no reason to expect them to be mutually nonsuperior. A new technique is normally adopted because, at existing prices and wage rates, it promises a higher return than the one in use, per unit of financial investment. It does not have to wait for a change in prices to make it eligible. But it will not remain exceptionally profitable for long. Copiers wipe out the initial competitive advantage of new commodities and rising real wage rates, of higher productivity. Meanwhile, new, more eligible techniques are being introduced. At each moment, the prospect of higher profits is inducing change, while, over a run of years, the *ex post* average realized rate of profit may be constant or falling (Joan Robinson, 1979, pp. 20–21).

After much water had passed under the bridge and some sensibilities had been exacerbated, Joan Robinson (1978, pp. 122–123) pointed out that Samuelson accepted 'after some hesitation', the logic of the pseudo-production function and

> he even referred to a 'general blueprint technology model of Joan Robinson and MIT type' but his interpretation of it was (and still is) very different from mine. He recognized that each point on a pseudo function is supposed to represent an economy in a steady state, in which inputs are being reproduced in unchanged physical form, and yet he supposed that saving could rise an economy from one point to the position at another. He envisages a process of accumulation creeping up the pseudo-production function from lower to higher shares of wages, and higher to lower rates of profit. But an increase in gross investment above the rate required to maintain a steady state would entail an enlargement of investment (which would have to shrink again when a new steady state was reached). The former pattern of prices would be upset. Inputs appropriate to one technique would have to be scrapped and replaced by those appropriate to another. And how are we to imagine that the prospect of a lower rate of profit in the future induces these changes to be made?

In 1975 Joan Robinson (1982, p. 91) stressed that the pseudo-production function 'permits only of comparisons of imaginary equilibrium positions already in existence, not a process of accumulation going on through time'.

> There is no such phenomenon in real life as accumulation taking place in a given state of technique knowledge. The idea was introduced into economic theory only to give a meaning to the concept of the marginal productivity of capital, just as the pseudo production function was constructed in order to show that it has no meaning (Joan Robinson, 1979a, pp. 82–83).

From Samuelson's rebuttal (1977, pp. 134–141) it appeared to Joan Robinson (1982, p. 91) that with respect to accumulation 'he is still a completely unreconstructed pre-Keynesian neoclassic. He expects to find the rate of interest (which is what he calls what Sraffa calls the rate of profits) lowered by successful saving-investment abstaining from consumption'.

'The furore about "reswitching" raged around the conception of a pseudo-production function' (Robonson, 1978, p. 121).

Looking over the controversy, Joan Robinson (1979a, p. xv) mused:

> The participants in the controversy, on both sides, failed to observe that it had nothing whatever to do with the analysis of the choice of technique or the determination of the rate of profit in a process of accumulation going on through historical time.
>
> Perhaps I am partly to blame for introducing the expression 'a book of blueprints' for an imaginary list of mutually non-superior techniques all available at once, but at least I did insist that my pseudo-production function could be used only for comparing stocks of capital each already in existence.

For Joan Robinson (1979a, pp. 69–70) the pseudo-production function was a useful construct but it should not be incorporated in the construction of dynamic theory. The stocks of inputs pertaining to two different techniques cannot exist side by side in time and space. No such thing as a book of blueprints pertaining to various interest rates exists. When accumulation proceeds, techniques develop and future techniques are unknown today. In reality no stock of capital is ever perfectly congruent with expectations of profit. 'The pseudo-production function is not a model for the analysis of capitalism but a device to smoke out the contradictions in mainstream teaching'.

Referring to his 1966 summary of the debate, where he clearly differentiates his position from that of his opponents (1972, pp. 230–235) and the shots fired for another decade, Samuelson reports that his '1966 discussion seems to stand up very well, and it would be hypocritical of me to give it other than a clean bill of health as a representation of my 1975 views' (Samuelson, 1977, pp. 134–135). It may be noted that for Solow (1967, pp. 1259–1260) who pokes fun at himself as a 'rank methodological opportunist', macroeconomic production functions are not a rigorously justifiable concept. 'In my mind it is either an illuminating parable, or else a mere device for handling data, to be used so long as it given good empirical results, and to be abandoned as soon as it doesn't, or as soon as something better

comes along'.

In a paper provocatively entitled 'The Abdication of Neo-Classical Economics' in a *festschrift* for A. K. Das Gupta, Joan Robinson (1979a, p. 37) wrote:

> The modern text-book theory, as Professor Samuelson has confessed, was based on the vulgarized American version of neo-classical thought that was put out by J. B. Clark. On this view: 'What a social class gets is, under natural law, what it contributes to the general output of industry.' The class of owners of wealth provide a factor of production called 'capital' which is embodied in 'capital goods'—equipment and stocks. A single quantity of 'capital' can be extracted from one set of machines and embodied in another, receiving as its reward the profit determined by the 'marginal productivity' of 'capital' to the economy as a whole.
>
> Thorstein Veblen, reviewing a book by J. B. Clark, immediately pointed out the fallacy:
>
> > ... Here, as elsewhere in Mr. Clark's writings, much is made of the doctrine that the two facts of 'capital' and 'capital goods' are conceptually distinct, though substantially identical. The two terms cover virtually the same facts as would be covered by the terms 'pecuniary capital' and 'industrial equipment' ...
> >
> > ... This conception of capital, as a physically 'abiding entity' constituted by the succession of productive goods that make up the industrial equipment, breaks down in Mr. Clark's onw use of it when he comes to speak of the mobility of capital; that is to say, so soon as he makes use of it ...
> >
> > ... The continuum in which the 'abiding entity' of capital resides is a continuity of ownership, not a physical fact. The continuity, in fact, is of an immaterial nature, a matter of legal rights, of contract, or purchase and sale. Just why this patent state of the case is overlooked, as it somewhat elaborately is, is not easily seen. But it is plain that, if the concept of capital were elaborated from observation of current business practice, it would be found that 'capital' is a pecuniary fact, not a mechanical one; that it is an outcome of a valuation, depending immediately on the state of mind of the valuers; and that the specific marks of capital, by which it is distinguishable from other facts, are of an immaterial character ...

Joan Robinson reiterated that after the Keynesian revolution, Samuelson (ignoring Thorstein Veblen) adopted J. B. Clark's interpretation of capital. This then became the orthodox neoclassical perception. And the recalled again that in 1953 she attempted to find the meaning of capital (Joan Robinson, 1979a, p. 38).

> Does a quantity of capital mean a number of dollars or a list of machine tools, railway lines and other hard objects? And which is it that has a 'marginal product'?
>
> The only answer we got was: Let us pretend that it doesn't make any

difference.

Now, after twenty years, the state of play seems to be as follows. Professor Swan has retired from the game. It was he whose 'Meccano sets' started off the idea of capital made of a physical substance which, like finance, can change its form in any way required.

Professor Samuelson has repudiated J. B. Clark but continues republishing his text-book just the same.

Professor von Weizsäcker, the most subtle of neo-neoclassics, points out that *if* there is no expenditure out of profits (as on von Neumann's growth path) so that net profit is identical with net investment, and *if* investment is at just the rate necessary to maintain full employment over the long run, then all profits are required to maintain employment. (If we had some eggs, we could have some ham and eggs, if we had some ham.)

Professor Solow has retreated into a one-commodity world where there is perfect substitutability between labour and inputs of the commodity and where there is no distinction between households and firms. (The propensity to save of the community controls the rate of gross investment.)

Professor Hahm seems to maintain that there must be *some* meaning to a state of equilibrium but that no one can yet say what it is.

However, the theory of profits based on the productivity of capital is still taught all over the world. It flourishes particularly in India. A great deal of talent and industry goes into the profession of economists in the subcontinent but very little of any relevance comes out.

On the occasion of publishing selections from her major contributions to economic theory for half century, Joan Robinson (1978, pp. xvii–xix) reminisced and offered the following commentary and perception of the notorious capital controversy between the two Cambridges:

Professor Samuelson had taken over 'marginal productivity' from J. B. Clark and he maintained that, though 'capital' is not really made of putty that can be squeezed into various forms without loss of its substance, yet it is *like* putty in the relevant respect. He evidently took this on faith and had not given it much thought.

In 1961 I was invited to take a couple of seminars at MIT. I chose the subject: The Use and Abuse of the Production Function. During the first session, I asked Samuelson: When you define the marginal product of labour, what do you keep constant? For a moment, he was quite disconcerted, and then started off on some baffling rigmarole. I cut in: Paul, I asked you a simple question, can't you give me a simple answer? He replied that he would have to think it over. This scene was long remembered by the students at MIT who witnessed it.

Samuelson turned the joke against himself. He put round a paper next day as follows: Thursday at 4.40, Mrs. Robinson asks the question. Professor Samuelson: Well I mean to say, the Kings of England were William the First,

and William the Second... Mrs. Robinson: Come, come sir, answer the question!

Friday 6.30 a.m. (implying a sleepless night) the answer is that either you keep all physical inputs constant or you keep the rate of interest constant.

This clue would have led him to the heart of the matter if he had followed it up, but he was deflected by the notion of a book of blueprints and produced his own pseudo-production function. In setting up the assumptions, he stumbled upon the conditions for labour-value prices, so that his diagram *looks* like a production function on which a technique that offers a higher output per unit of labour always requires a higher value of capital.

When the great 're-switching' debate broke out, Samuelson had to admit that, in the general case, a pseudo-production function may have any shaped and that, at some points, the technique with the higher output per man may show a *lower* value of capital per man.

It was fun to tease Samuelson, but this debate took attention away from the main issue. A pseudo-production function is an imaginary comparison of stocks of physical capital each already in being; each must be supposed to have been produced by investment in the past and to be now kept intact because the future is expected to be like the past. When the future is expected to be different from the past, say because the current rate of profit has altered, it would not be possible to change the stock of capital except by a long process of investment and dis-investment.

After years of argument, the neo-neoclassics still refuse to understand the difference between a comparison of timeless equilibrium positions and the effects to be expected from a change taking place at a particular moment.

Though the 'Cambridge critics' were never answered, mainstream teching, till today, seems to go on in the same old way.

I was delighted to find in a dictionary the world mumpsimus, which means stubborn persistence in an error after it has been exposed.

V

She admitted that disputes would continue to occur where political issues are involved, for they hinge on differences in judgment and moral values. But she (1973a, p. 122) was distressed that lengthy controversies continue to surround purely logical points: 'In economics, unfortunately, logic is corrupted by opinions. Arguments are judged by their conclusions, not by their consistency. Terms are used without definitions, so that propositions containing them are merely incantations. Economics is a branch of theology'.

At the beginning of the war, as a distraction from the news and influenced by Kalecki, Joan Robinson began a serious study of Marx and Rosa Luxemburg. For her, the principal message of Marx was the injunction to think in terms of history, not of equilibrium. Her (1942, 1966) book, her own 'Marxian heresy', is sometimes

considered as the best introduction to Marx by a respectable academic economist. She has done much to reinstate Marx as a serious, though sometimes misguided, economist. With the passion that Marx arouses among both his critics and disciples and the intolerance of some disciples towards criticism of the prophet, it is natural tht her venture met with a mixed reception. Whatever the inherent merit of her treatment of Marx and her contribution to the comparisons of the economic analysis of *Capital* with mainstream academic teaching, her (1942, 1966) book had an indellible impact on her. It is one of the inspirations for *The Accumulation of Capital.* It provides, *inter alia*, a clue to her view of history and time; of the capitalist rules of the game pertaining to now property and the system beset by conflict; of the inflationary barrier; and of animal spirits (initially in fluenced by Keynes).

Joan reinstated Marx as an economist and made his reproduction schemes respectable, while committing the 'sacrilege' of debunking his labor theory of value.

Keynes was, of course, right when he warned Joan Robinson, that her fierceness might get her into trouble in some quarters. At the time, Keynes was not to know in how many diverse quarters she would arouse tempers. We have seen the running controversies she had with the mainstream. We also hinted at some disputes with her 'fellow travellers'. Her passionate outbursts against monetarism in all its guises can even be left to the imagination of the reader (but to set the record straight, see Joan Robinson, 1971). Her disputes with orthodox Marxists are summarized in her hilarious 'Open Letter from a Keynesian to a Marxist' (Ronald Meek), first published in 1953 (Joan Robinson, 1973a, pp. 264–268). This is very revealing of what Joan stood for and what she opposed and warrants lengthy extracts.

> First I would like to make a personal statement. You are very polite, and try not to let me see it, but, as I am a bourgeois economist, your only possible interest in listening to me is to hear which particular kind of nonsense I am going to talk. Still worse—I am a left-wing Keynesian. Please do not bother to be polite about that, because I know what you think about left-wing Keynesians.
>
> You might almost say I am the archetypal left-wing Keynesian. I was drawing pinkish rather than bluish conclusions from the *General Theory* long before it was published. (I was in the privileged position of being one of a group of friends who worked with Keynes while it was being written.) Thus I was the very first drop that ever got into the jar labelled 'Left-wing Keynesian'. Moreover, I am quite a large percentage of the contents of the jar today, because so much of the rest has seeped out of it meanwhile. Now you know the worst.
>
> But I want you to think about me dialectically. The first principle of the dialectic is that the meaning of a proposition depends on what it denies. Thus the very same proposition has two opposite meanings according to whether you come to it from above or from below. I know roughly from what angle

you come to Keynes, and I quite see your point of view. Just use a little dialectic, and try to see mine.

I understand Marx far and away better than you do.

When I say I understand Marx better than you, I don't mean to say that I know the text better than you do. If you start throwing quotations at me you will have me baffled in no time. In fact, I refuse to play before you begin.

What I mean is that I have Marx in my bones and you have him in your mouth.

Suppose we each want to recall some tricky point in *Capital*, for instance the schema at the end of Volume II. What do you do? You take down the volume and look it up. What do I do? I take the back of an old envelope and work it out.

Now I am going to say something still worse. Suppose that, just as a matter of interest, I do look it up, and I find that the answer on my old envelope is not the one that is actually in the book. What do I do? I check my working, and if I cannot find any error in it, I look for an error in the book. Now I suppose I might as well stop writing, because you think I am stark staring mad. But if you can read on a moment longer I will try to explain.

It isn't a thing you can learn from books. If you wanted to learn to ride a bicycle, would you take a correspondence course on bicycle riding? No. You would borrow an old bicycle, and hop on and fall off and bark your shins and wobble about, and then all of a sudden, Hey presto! you can ride a bicycle. It as just like that being put through the economics course at Cambridge. Also like riding a bicycle, once you can do it, it is second nature.

When I am reading a passage in *Capital* I first have to make out which meaning of c Marx has in mind at that point, whether it is the total stock of embodied labour, or the annual flow of value given up by embodied labour (he does not often help by mentioning which it is—it has to be worked out from the context) and then I am off riding my bicycle, feeling perfectly at home.

A Marxist is quite different. He knows that what Marx says is bound to be right in either case, so why waste his own mental powers on working out whether c is a stock or a flow?

Then I come to a place where Marx says that he means the flow, although it is pretty clear from the context that he ought to mean the stock. Would you credit what I do? I get off my bicycle and put the error right, and then I jump on again and off I go.

Now, suppose I say to a Marxist: 'Loòk at this bit—does he mean the stock or the flow?' The Marxist says: 'C means constant capital', and he gives me a little lecture about the philosophical meaning of constant capital. I say: 'Never mind about constant capital, hasn't he mistaken the stock for the flow?' Then the Marxist says: 'How could he make a mistake? Don't you know that he was a genius?' And he gives me a little lecture on Marx's genius.

I think to myself: This man may be a Marxist, but he doesn't know much about geniuses. Your plodding mind goes step by step, and has time to be careful and avoids slips. Your genius wears seven-league boots, and goes striding along, leaving a paper-chase of little mistakes behind him (and who cares?). I say: 'Never mind about Marx's genius. *Is* this the stock or is it the flow?' Then the Marxist gets rather huffy and changes the subject. 'And I think to myself: This man may be a Marxist, but he doesn't know much about riding a bicycle.

The thing that is interesting and curious in all this is that the ideology which hung as a fog round my bicycle when I first got on to it should have been so different from Marx's ideology, and yet my bicycle should be just the same as his, with a few modern improvements and a few modern disimprovements.

Ricardo was followed by two able and well-trained pupils—Marx and Marshall. Meanwhile English history had gone right round the corner, and landlords were not any longer the question. Now it was capitalists. Marx turned Ricardo's argument round this way: Capitalists are very much like landlords. And Marshall turned it round the other way: Landlords are very much like capitalists. Just round the corner in English history you see two bicycles of the very same make—one being ridden off to the left and the other to the right.

Marshall did something much more effective than changing the answer. He changed the question.

Marshall turned the meaning of Value into a little question: Why does an egg cost more than a cup of tea? It may be a small question but it is a very difficult and complicated one.

Keynes changed the question back again. He started thinking in Ricardo's terms: output as a whole and why worry about a cup of tea? When you are thinking about output as a whole, relative prices come out in the wash—including the relative price of money and labour. The price level comes into the argument, but it comes in as a complication, not as the main point. If you have had some practice on Ricardo's bicycle you do not need to stop and ask yourself what to do in a case like that, you just do it. You assume away the complication till you have got the main problem worked out.

Well there you are—we are back on Ricardo's large questions, and we are using Marx's unit of value. What is it that you are complaining about?

Do not for heaven's sake bring Hegel into it. What business has Hegel putting his nose in between me and Ricardo?

In a highly provocative and most lucid book Joan Robinson (1962a) set out to clear the impenetrable fog about why economists believe what they believe and what it is that makes them believe it. She (p. 1) began by asserting that economics 'has always been partly a vehicle for the ruling ideology of each period as well as partly a method of scientific investigation'.

She (pp. 2–3) attempted to distinguish ideology from science by pointing out

that when 'an ideological proposition is treated in a logical manner, it either dissolves into a completely meaningless noise or turns out to be a circular argument'. And, as distinct from a scientific proposition, 'the hallmark of a metaphysical proposition is that it is not capable of being tested'. But the metaphysical propositions do have meanings. 'They express a point of view and formulate feelings which are a guide to conduct'. Moreover, 'metaphysical propositions also provide a quarry from which hypotheses can be drawn. They do not belong to the realm of science and yet they are necessary to it'. As an example of such a metaphysical proposition she pointed to the slogan 'all men are equal' as a research program.

> Let us find out whether class or colour is correlated with the statistical distribution of innate ability. It is not an easy task, for ideology has soaked right into material we are to deal with. What is ability? How can we devise measurements that separate what is innate from what is due to environment? We shall have a hard struggle to eliminate ideology from the answer, but the point is that without ideology we would never have thought of the question.

Unfortunately in economics, as in other fields, 'no one... is conscious of his own ideology, any more than he can small his own breath' (p. 41). Be that as it may,

> whether or not ideology can be eliminated from the world of thought in the social sciences, it is certainly indispensable in the world of action in social life. A society cannot exist unless its members have common feelings about what is the proper way of conducting its affairs, and these common feelings are expressed in ideology. (p. 4)

She (pp. 4–6) considered ideology as something of a substitute for instinct—a standard of morality inculcated at an early age. In order for the species to survive any animal must have some egoism, extended from the individual to the family. However, 'social life is impossible unless the pursuit of self-interest is mitigated by respect and compassion for others. A society of unmitigated egoists would knock itself to pieces; a perfectly altruistic individual would soon starve'. In most cases altruistic emotion is very unreliable; it is only 'strong enough to evoke self-sacrifice from a mother defending her young'. Therefore, 'since the egoistic impulses are stronger than the altruistic, the claims of others have to be imposed upon us. The mechanism by which they are imposed is the moral sense or conscience of the individual'. For example, though stealing is not morally as repugnant as cruelty and meanness, 'a lack of honesty is a very great nuisance in society. It is a source of expense and it is thoroughly tiresome—just as tiresome for thieves as for everyone else; without honour among thieves even thieving would be impracticable'.

Joan Robinson rejected the notion that morality derives either from religion or reason. For her (1962a, pp. 11 and 12), 'the upshot of the argument is that moral feelings are not derived from theology or from reason. They are a separate part of our equipment, like our ability to learn to talk'.

'Any economic system requires a set of rules, an ideology to justify them, and

conscience in the individual which makes him strive to carry them out' (Joan Robinson, 1962a, p. 13). However, even economic terminology is valued-loaded: 'Bigger is close to better; equal to equitable; goods sound good; disequilibrium sounds uncomfortable; exploitation, wicked; and sub-normal profits, rather sad' (p. 14). Nevertheless, the technical features of a given economic system can be described objectively.

> But it is not possible to describe a *system* without moral judgments creeping in. For to look at a system from the outside implies that it is not the only possible system; in describing it we compare it (openly or tacitly) with other actual or imagined systems. differences imply choices, and choices imply judgment. We cannot escape from making judgments and the judgments that we make arise from the ethical preconceptions that have soaked into our view of life and are somehow printed in our brains. (p. 14)

This need to rely on judgment has a side effect. It makes economists more uncomfortable and contentious. 'The reason is that, when a writer's personal judgment is involved in an argument, disagreement is insulting' (p. 24). Perhaps the acceptance of economics as value-loaded and inflitrated by judgment came easier to Joan Robinson than to most of her American colleagues because, as she (p. 74) admitted, she was not taught in Cambridge that economics should be value-free or that a sharp line of demarcation could be drawn between positive and normative economics.

In Joan Robinson's (1970, p. 122) view (and here she spoke of herself, but left that conclusion to the reader),

> every human being has ideological, moral and political views. To pretend to have none and to be *purely objective* must necessarily be either self-deception or a device to deceive others. A candid writer will make his preconceptions clear and allow the reader to discount them if he does not accept them. This concerns the professional honour of the scientist. But to eliminate value judgments from the subject-matter of social science is to eliminate the subject itself, for since it concerns human behaviour it must be concerned with the value judgments that people make. The social scientist (whatever he may privately believe) has no right to pretend to know any better than his neighbours what ends society should serve. His business is to show them why they believe what they purport to believe (as far as he can make it out) and what influence beliefs have on behaviour.

What all is said and done, however, 'economics is only a branch of theology. All along it has been striving to scape from sentiment and to win for itself the status of science' (Joan Robinson, 1962a, p. 21). Economists eagerly look to the natural sciences as pointing a way for them to emerge from the morass of ideology.

> The great prestige of the natural sciences and the spectacular technology founded upon them leads to the hope that if only scientific method could be applied to the study of society we might hope to find a solution for the dreadful problems hanging over our life today.

> There is not yet much reason to expect that such a grand programme can be fulfilled. The methods to which the natural sciences owe their success—controlled experiment and exact observation of continually recurring phenomena—cannot be applied to the study of human beings by human beings. So far, no equally successful method of establishing reliable natural laws has been suggested. (Joan Robinson, 1971, p. 119)
>
> My saying: 'A serious subject is neither more nor less than its own technique' was a half truth, but it is the important half. In the natural sciences, experiments can be repeated and observations checked so that a false hypothesis is quickly knocked out. I agree with Kuhn's view of science as a particular kind of social activity which is carried on for its own sake, with a particular set of accepted rules. That it enables us to understand an aspect of the universe is, so to speak, an accidental by-product of this activity. Economics is also a social activity but its rules are such that its by-products are much less impressive. (Joan Robinson, 1979a, p. 116)

All this does not mean that the social scientists (and particularly economists) should jump to conclusions, propound circular arguments, or resolve disputes by abuse. Neither does it mean

> that economic theory is useless. We cannot help trying to understand the world we are living in, and we need to construct some kind of picture of an economy from which to draw hypotheses about its mode of operation. We cannot hope ever to get neat and precise answers to the questions that hypotheses raise, but we can discriminate among the pictures of reality that are offered and choose the least implausible ones to elaborate and to confront with whatever evidence we can find. (p. 10)

Joan Robinson (1951, 1978, p. 171) sounded a note of warning:

> It is a common vice of present-day economic argument to jump from a highly abstract piece of analysis straight to prescriptions for policy, without going through the intermediate stage of examining how far the assumptions in the analysis fit the facts of the actual situation.

Economists should investigate the nature of their differences and embark on a research program in an attempt to resolve them (Joan Robinson, 1970, p. 119). It is difficult, however, to apply the scientific method in the social sciences, mainly because 'we have not yet established an agreed standard for the disproof of an hypothesis. Without the possibility of controlled experiment, we have to rely on interpretation of evidence, and interpretation involves judgment; we can never get a knock-down answer. But because the subject is necessarily soaked in moral feelings, judgment is coloured by prejudice' (Joan Robinson, 1962a, pp. 22–23). But the problem cannot be resolved by shedding prejudice and approaching the issue under discussion with full objectivity. She (1960, 1975, p. 113) does not think that a 'purely economic argument can ever finally settle any question, for political and human considerations are always involved in every question and are usually decisive'. However, 'analysis that is put at the service of ideology is not interesting,

because we know in advance what the answer is going to be. When we consider the world evolving around us, we see a great number of questions that need to be explored because the answers are not obvious at all' (Joan Robinson, 1979a, p. 261). She (1962a, p. 23) warns us that 'anyone who says to you: "Believe me, I have no prejudices," is either succeeding in deceiving himself or trying to deceive you'. In final analysis, 'economists are not strictly enough compelled to reduce metaphysical concepts to falsifiable terms and cannot compel each other to agree as to what has been falsified. So economics limps along with one foot in untested hypotheses and the other in untestable slogans' (p. 25).

She concluded her *Economic Philosophy* (1962a, pp. 146–147) on a pessimistic/optimistic note:

> Perhaps all this seems negative and destructive. To some, perhaps, it even recommends the old doctrines, since it offers no 'better'ole' to go to. The contention of this essay is precisely that there is no 'better'ole'.
>
> The moral problem is a conflict that can never be settled. Social life will always present mankind with a choice of evils. No metaphysical solution that can ever be formulated will seem satisfactory for long. The solutions offered by economists were no less delusory than those of the theologians that they displaced.
>
> All the same we must not abandon the hope that economics can make an advance towards science, or the faith that enlightenment is not useless. It is necessary to clear the decaying remnants of obsolete metaphysics out of the way before we can go forward.
>
> The first essential for economists, arguing amongst themselves, is to 'try very scriously', as Professor Popper says that natural scientists do, 'to avoid talking at cross purposes' and, addressing the world, reading their own doctrines aright, to combat, not foster, the ideology which pretends that values which can be measured in terms of money are the only ones that ought to count.

A few years before she died, Joan Robinson (1979a, pp. 29–30) concluded her challenging essay 'What are the Questions?' (originally published in 1977) with these words:

> The present situation raises new questions. The long boom of twenty-five years after 1945, interrupted only by shallow and local recessions, blew up into a violent inflation in 1973 and collapsed into a world-wide slump. The economists had sunk into complacency and now do not know what to say.
>
> On the plane of doctrine, Keynes had been smoothered in the neo-classical synthesis, and a new 'dynamic' version of Say's Law had come into operation.
>
> Now that the Juggernaut car has come more or less to a halt, we must take stock of the problems that its passage leaves behind.
>
> The consumption of resources, including air to breathe, has evidently impoverished the world; the long struggle over relative shares has implanted a chronic tendency to inflation in the industrial countries, which no resort to

monetary stringency can master. The uneven development of trading nations has set insupportable strains on the international financial system. Growth of wealth has not after all removed poverty at home, and 'aid' has not reduced it abroad. Now unemployment exacerbates social problems and embitters politics.

In this situation, the cry is to get growth started again. The European countries in a weak competitive position plead with West Germany to spend money on something or other to improve the market for the rest so that they can permit employment to increase. Any up turn in the indicators in the United States is greeted as a sign that we shall once more be pulled up out of the slough.

Here we come upon the greatest of all economic questions, but one that in fact is never asked:: what is growth for? Under the shadow of the arms race and its diffusion into the Third World, perhaps no merely economic questions are really of great importance; but even if it is a secondary question, we ought to consider it.

The obvious answer is that there is apparently no way to reduce unemployment except by increasing industrial investment. There is no question of choosing between alternative uses for given resources. Past development has dug deep grooves by physical investment, creation of financial property, and specialization of the labour force; existing resources cannot be redeployed; our only hope is to pour more resources down the old grooves.

The problem of the use of resources, and the institutional setting that controls it, cannot be confined within the bounds of theoretical economic analysis, but the economic aspect of the matter ought to be discussed. What is the object of production in a modern industrial nation, and if we could have more of it (through technical change and capital accumulation), what should we use it for? consumption by whom, of what?

The question was supposed to be settled by appeal to the individual's freedom of choice, but there are three very large objections to such a solution.

The first arises from inequality of the distribution of purchasing power between individuals. The nature of accumulation under private enterprise necessarily generates inequality and is therefore condemned to meeting the trivial wants of a few before the urgent needs of the many.

Do we want renewed growth in order to maintain and enhance disparities in consumption? Have we not become disllusioned with the doctrine that 'disease, squalor and ignorance' will soon be cleared away by the 'trickle down' from ever-growing conspicuous consumption?

Secondly, many kinds of consumption that are chosen by some individuals generate disutility for others. The leading case is the spread of private motor cars—the higher the level of consumption, the more uncomfortable life becomes; this fact is painfully obvious, but orthodox doctrine has not been able to accommodate it.

Thirdly, to keep the show going, it is necessary continually to introduce new commodities and create new wants. In a competitive society, a growth of consumption does not guarantee a growth of satisfaction.

Here is the problem. The task of deciding how resources should be allocated is not fulfilled by the market but by the great corporations who are in charge of the finance for development.

These questions involve the whole political and social system of the capitalist world; they cannot be decided by economic theory, but it would be decent, at least, if the economists admitted that they do not have an answer to them.

The University of Tennessee

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