WELFARE CONSIDERATIONS OF NORTH AUSTRALIAN DEVELOPMENT DECISIONS

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Issue is taken with those who adopt a short-term economic allocation approach to the question of the development of Northern Australia. It is argued that welfare-economics criteria are inappropriate when consideration of development is involved and that attention must be paid by economists to immeasurable benefits and to national long-term goals rather than to the maximization of immediate utilities.

"Correcter prognoses will generally issue from the judgments of those with better knowledge of mankind. Can one learn this knowledge? Yes; some can. Not, however, by taking a course in it, but through 'experience'.—*Can someone else be a man's teacher in this? Certainly. From time to time he gives him the right* tip.—*This is what 'learning' and 'teaching' are like here.—What one acquires here is not a technique; one learns correct judgments. There are also rules but they do not form a system and only experienced people can apply them right. Unlike calculation rules."*

L. Wittgenstein,
Philosophical Investigations,
Tr. G. E. M. Anscombe, 1953, p. 227e.

It is an intrepid or foolhardy economist that ventures to stir up yet again the muddy waters of "Northern Development"! Not for nothing has the subject been spoken of as one "which for some psychological reason excites unusual passions among disputants" (**1** p. 267). Yet the question is "who is to be master—polemical and emotive 'knock-down arguments' or reasoned discussion?" And it is in the belief—perhaps unduly sanguine—that a reasoned consensus can be arrived at that I present this paper.

A Discourse on Method

I shall begin with some remarks on the general nature of ends and means and of choice, since some principle of choice underlies all economic decision-making. Ought we to have in mind any absolute end? Such a question is often answered affirmatively and yet, on closer analysis, the 'end' appears merely as a means to another end. We shall probably find very few, if any, true ends and what we should really be looking for are the consequences of certain things and activities. But suppose we insist that we do have a certain end in view: would we be justified in using all means to attain that end? Put like that the question is meaningless for we must know the means and the ends involved. In some cases the means surely are appropriate for the ends:

"If you want to smoke a cigarette that justifies you in making a spill out of yesterday's newspaper and setting it alight" (**2** p. 35).

But on the other hand it is clearly not true that the means are appropriate:

"If you want to smoke a cigarette that does not justify you in making a spill out of a five pound note and setting it alight" (**2** p. 35).

Some decisions, after they have been made, cannot be revoked. If a dam is built we have the dam for good or ill; the alternative decisions we might have made are all foregone. Other decisions of a more general nature can be modified or even rejected precisely because they are general. A decision, for example, to "equate the value of marginal products" may always be reconsidered and re-evaluated. Sometimes the re-evaluation will be voluntary and spontaneous; at other times circumstances may compel a change of decision.

Nevertheless, if we wish to make wise decisions, we are not free to act in an arbitrary manner. For wise decisions are made within principles in such manner that all decisions made under cover of the same principle may be judged one against the other. The principles themselves, of course, are accepted by choice and may be "moral laws, maxims of prudence, statements of standards, and the individual's private rules . . . . . To have [a principle] and act on it is to have adopted and be carrying out a general choice" (**2** p. 37). After we have made the choice of our principle we, in effect, have erected a standard. And whether something thereafter comes up to our standard is a matter of fact and not a question of choice. But let us see what Wittgenstein said about the principle itself:

> "A rule stands there like a sign-post—Does the signpost leave no doubt open about the way I have to go? Does it show which direction I am to take when I have passed it; whether along the road or the footpath or cross-country? But where is it said which way I am to follow it; whether in the direction of its finger or (e.g.) in the opposite one?—And if there were, not a single signpost, but a chain of adjacent ones or of chalk marks on the ground—is there only *one* way of interpreting them? So I can say, the signpost does after all leave no room for doubt. Or rather, it sometimes leaves room for doubt and sometimes not. And now this is no longer a philosophical proposition but an empirical one" (**3** pp. 39-40e).

It seems to me that what Wittgenstein is suggesting is that even if we do have a rule, a principle, we do not always know how we ought interpret that rule. So suppose our rule says: "equate social marginal products", we do not know, for example, whether action is to be taken whereby they are equated today, tomorrow or fifty years hence.

Perhaps, then, the difficulty can be removed by making the signpost, the rule, more exact. But where do we stop in our refinements? Do we not run the danger of making our rule so perfect, so esoteric as to make it inapplicable in practice?[1] If this is so then we are faced with the choice of rejecting the principle in its entirety on account of its inexactness (in which case we are obliged to produce another, more exact) or of accepting the principle whilst remaining aware of its assumptions and consequent limitations for direct application. "The sign-post is in order —if, under normal circumstances, it fulfils its purpose" (**3** p. 41e). But

[1] *Cf.* Wittgenstein (**3** p. 42e): "'Inexact' is really a reproach, and 'exact' is praise. And that is to say that what is inexact attains its goal less perfectly than what is more exact. Thus the point here is what we call 'the goal'. Am I inexact when I do not give our distance from the sun to the nearest foot, or tell a joiner the width of a table to the nearest thousandth of an inch? No single idea of exactness has been laid down; we do not know what we should be supposed to imagine under this head—unless you yourself lay down what is to be so called. But you will find it difficult to hit upon such a convention; at least any that satisfies you."

it is precisely the difficulty men have in agreeing on the definition of "normal circumstances" and of "purpose" that makes this axiom of limited value and which leads to the "unusual passions among disputants" previously referred to.

Apart from the interpretation of the principle in any particular instance it is necessary to say something more about the principle itself. Note again that it has been freely chosen, and others might equally well choose other standards or principles. 1966 cars suit most people better than 1900 cars, yet on different standards of evaluation 1900 cars might be preferred by some. Generally, of course, the standards adopted by other people seem to us absurd and unwarranted! Yet standards are necessary and in choosing them we do well to look at the consequences of that choice; a good standard should lead to good results. It follows that we can evaluate the desirability of the principles themselves; any principle may be subjected to the criticism that its replacement by another would lead to even more desirable results. And it may be that a principle, valid for a certain period of time or in a given context is no longer the most suitable in a subsequent time-period or different context. "The wise man tries to see all the relevant principles and all the important consequences, and then to make a judgment on the whole" (**2** p. 41). It is obvious that to be "wise" therefore is a very tedious, time-consuming and often nearly impossible process. Ought we then to condemn someone who whilst making the attempt to be "wise" finds it impossible to spell out in detail *all* the considerations which have led him to make his decision? It is true that to the outsider such decisions sometimes look like intuition but might not that appearance be due to the fact that *all* aspects of a given situation had been taken into account by the decision-maker?[2]

Suppose, then, one has taken into account all aspects of the situation in making a decision; are the anticipated good results guaranteed? Of course not. There remains always an element of uncertainty in the picture and risk, therefore, is inevitably associated with judgment. One must use judgment not only in deciding when, where and in what direction to apply "the rule" but also in deciding whether certain facts come within the purview of "the rule"—or even whether they are facts or "unfacts"!

It seems that we come back to the importance of experience; experience is necessary in the adoption of principles and in the judgment as to how those principles are to be applied in any given instance. With experience it should be possible to judge well—if one does not give a loose rein to one's emotions and prejudices.

Welfare Criteria

To quote Mishan: "Theoretical welfare economics is . . . . that branch of study which endeavours to formulate propositions by which we may rank, on the scale of better or worse, alternative economic situations open to society" (**4** pp. 5-6). For Pigou also, welfare economics had to be "restricted to that part of social welfare that can be brought directly or

[2] *Cf.* Robinson (**2** p. 42): "We are prone to ask 'What is your reason for that decision'? as if he had only one. It seems that the best answer would be: 'If I made this decision for only one reason I should be injudicious. I have made it, I hope, in view of the whole situation and the whole of my general principles, since that is the judicious way to reach a decision. If so, my reason for it is my view of the whole situation plus all my relevant principles."

indirectly into relation with the measuring rod of money" (**5** p. 11).[3] Aspects of welfare other than the purely economic were presumed to move comparably with, or at least in the same direction as movements in economic welfare. If this cannot be assumed then, as Pigou admitted, "the practical usefulness of our conclusions is wholly destroyed"[4] (**5** p. 12). Thus if we have in mind some concept of "overall" welfare, some doubt as to the advisability of invariably accepting the criteria of welfare economics is engendered. Even so strong a supporter of the Pigovian concept as Robertson felt constrained to acknowledge that "the economist must be prepared to see some suggested course of action which he thinks would promote economic welfare turned down—his own judgment perhaps consenting, perhaps not—for overriding reasons" (**6** p. 27). And Hicks is willing to go even further: why should we allow the economist, he says in effect, to consider that he has fully performed his duty after he has passed on the economic effects of a certain course of action? "I would now say," continues Hicks, "that if he [the economist] limits his function in that manner, he does not rise to his responsibilities. It is impossible to make "economic" proposals that do not have "non-economic aspects", as the Welfarist would call them; when the economist makes a recommendation, he is responsible for it in the round; all aspects of that recommendation whether he chooses to label them economic or not, are his concern" (**7** p. x).[5]

It is precisely the economic welfare economists' refusal to be responsible for policy "in the round" that deserves investigation. Is the monistic conception of economics as being a study of the maximization of economic welfare justified? Can it not be legitimately maintained that it is the claim of welfare economics to be a positive science that has engendered so many disputes in the policy field?

Welfare economics is clearly closely associated with the theory of consumer behaviour and of consumer utility maximization in a given market situation. Hence it follows that if substantial criticisms can be levied against the accepted theory of consumer choice they can be levied, *mutatis mutandis*, against welfare economics. Such a criticism is provided by Shackle:

"In economics of the accepted, Western maximizing kinds we are

[3] *Cf.* Robinson (**41** p. 137): "The first essential for economists, arguing among themselves is to 'try very seriously', 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 which ought to count".

[4] *Cf. Times Literary Supplement* for November 11, 1965, in an article entitled "Culture and Conscience" (p. 994): "It has become increasingly clear in the past century that moral and material progress are far less closely linked than the Enlightenment had supposed. The latter moves in a steady upward curve, the former dips and rises and dips again like a temperature chart."

[5] It is interesting to note that as Hicks concerned himself increasingly with what may be called "applied economics" he found it inevitable that value judgments should be included in the analysis. As he admits: "I have . . . . now become conscious that the position to which I have been coming is different from that which seems to be occupied by many economists . . . . . . The view which, now, I do *not* hold I propose . . . . to call Economic Welfarism . . . . The line between Economic Welfarism and its opposite is not concerned with what economists call utilities; it is concerned with the transition from utility to the more general good, welfare (if we like) itself" (**7** pp. viii, ix).

confronted with a basic contradiction: men are choosers; they choose the best, each for himself . . . . And so we have man in this situation: what is 'the best' for him is known to him uniquely and for certain; how to attain it is dictated by circumstances, and can be inferred from them. What, then, is left for him to do in the way of *choosing?* Where is there room for his judgment? . . . .

Conventional economics is not about choice, but about acting according to necessity. Economic man obeys the *dictates* of reason, follows the *logic of choice.* To call this conduct choice is surely a misuse of words, when we suppose that to him the ends amongst which he can select, and the criteria of selection, are given, and the means to each end are known . . . . Choice in such a theory is empty, and conventional economics should abandon the word" (**8** p. 272).

If follows that if it be granted that we can legitimately transpose such criticisms onto the welfare economics plane, the use of the word "choice" in the making of investment decisions with the objective of maximizing economic welfare is equally meaningless. Briefly, if the criteria are minutely specified and rigorously followed, what "choice" is there? Surely our criteria of maximization become empty boxes when carried to these extremes![6]

It follows, too, that if we cannot legitimately lay down economic maximization criteria for the individual, we cannot unambiguously summate the individual maxima to reach a community maxima. Hence Bergson's social welfare function[7] rests, *ab initio*, on shaky foundations.

Does it improve matters to talk about "ideal output"[8] in terms of

[6] It is interesting to note that Wicksteed (**9** pp. 776-7) was concerned to point out the limitations of using the concept of *homo economicus* in any *practical* analysis of consumer behaviour:

"In our private administration of resources we are concerned both with things that are and with things that are not in the circle of exchange, and the principle of distribution of resources is identical in both cases . . . When we are considering whether we will live in the country or the town, we may find, on examination, that we are carefully equating increments and decrements of such apparently heterogeneous indulgences as those associated with fresh eggs and friendship . . . . but they submit to the law formulated by Aristotle with reference to virtue, and analyzed by modern writers with reference to business, for they all consist in combining factors . . . . . *in the right proportion*, as fixed by that distribution of resources which establishes the equilibrium of their differential significances in securing the object contemplated, whether that object be tranquillity of mind, the indulgence of an overmastering passion or affection, the command of things and services in the circle of exchange *or a combination of all these, or of any other conceivable factors of life* (italics D.T.H.) . . . . . . Exchangeable things are never really the ultimately significant things at all. They are means. The ends which are always subjective experiences of some kind . . . . are not in any way exchangeable; and there is no machinery to secure that increments and decrements of exchangeable things shall in industrial equilibrium take the same place and have the same differential significance on the scales of any two men when measured not in terms of other means, but in terms of ends."

[7] Usually interpreted in the sense of saying that the community is deemed to be better off if, as a result of a change, at least one person is better off whilst the others are no worse off. *Or:* "the potential losers could not profitably bribe the potential gainers to oppose the change" (**10** p. 268).

[8] *Cf.* Little (**10** pp. 193-4): "The ideal output only exists in theory. Except when marginal cost is zero, and overheads can, in fact, be met out of surplus of some kind, it is indeterminate. And, in any case, ... the theory which lies behind the concept of an 'ideal output' has at best only a very rough and ready application to the real world."

social marginal product as contrasted with private marginal product?[9] The answer must be a qualified "yes". "Yes", because by emphasizing possible divergences between the two and by leading us to a consideration of external economies and diseconomies we might well consider ourselves to be using operational concepts;[10] a qualified "yes" because even with this criteria it is arguable that additional criteria should be involved anyway.

Allocation versus Growth

Harrod once maintained that all economists were born as either little inflationists or little deflationists (he himself maintained he was a "flationist"!). Today the protagonists are the "allocationists" and the (ugly word) "growthmanshipists". No purpose is served in trying to mask the conflict since one's point of departure dominates much subsequent analysis and prescription. Yet, consciously or not, the conflict is frequently masked or ignored. Mishan, for instance whilst writing:

> "adjustments which may be demanded by allocation criteria alone, it is argued, may interfere with the more important factors making for growth" (**4** p. 157).

proceeds with his static analysis with the words:

> "I wish to make it plain from the start that my concern is with the narrower but less controversial aspect: with the validity of allocative criteria within their own limited framework" (**4** p. 157).

Naturally one cannot take issue with an analyst who carefully delimits the field of his analysis—and let it be said at once that within his chosen field Mishan gives a convincing account of optimal allocation. But the fact remains that growth fails to come out of such an analysis at all. Least of all are we made aware that frequently growth may necessitate the abnegation of our carefully drawn-up rules of allocation. There is little doubt about it; "welfare analysis" as Hutchinson maintained, "may have inhibiting effects in favour of the *status quo*". And he continues: "In any case, excessive claims for welfare economics have fostered the illusion of policies without politics, or that significant policy recommendations can be made without controversial value judgements (i.e. other than that it is better to have more wants satisfied than less). In its fuller-blooded "Utilityarian" (sic) form, the effects of welfare analysis may tend not so much to paralyse policy recommendations as to obscure policy choices by leaving essential value judgements latent and policy objectives not sufficiently fully and precisely stated" (**11** p. 165).[11]

[9] As does Pigou (**5**), of course, in a large part of his book.

[10] Chenery (**10a**) states that "economic theory tells us that an efficient allocation of investment resources is achieved by equating the social marginal productivity of capital in various uses". He considers that a modern market economy performs the job of allocation tolerably well and without intervention, but that in a developing economy the social marginal productivity criteria should be paramount having regard to the imperfections occasioned by the balance of payments problem, shortage of private capital, skilled labour shortages, etc.

[11] *Cf.* Viner (**12** p. 121): "In the actual course of policy-making in the real world . . . . the monistic concepts that economic theory uses in its welfare analysis seem always to be catch-all labels for complex packages of objectives that the policy-maker in practice is forced to separate out and to weigh against each other when they conflict with each other."

Thus in order to choose realistically we must know precisely what our policy objectives are—we must be consciously aware of the end. But, unfortunately, policy recommendations do not always carry with them an explicit statement of the end which they embrace—one is often left to infer it. An economist primarily interested in long-term growth must find an obsessive attachment to allocation criteria stultifying and unrewarding. He will agree with Wiles that "too delicate a comprehension of 'scarcity' problems, a determination never to violate Professor Lerner's welfare equations for however short a period or in however unimportant a connection, slows up the rate of growth. For it leads to hesitations, whether on the part of the government or of the individual entrepreneur, before investing . . . ." (**13** p. 248).

Of course, to ignore the allocation problem completely would merely result in the squandering of resources and would probably lead to no growth at all. But we should beware of talking in terms of the allocation of *given* resources, for in the modern world it is generally possible to alter the amount of resource availabilities by appropriate government action. (In consequence, of course, growth can conflict with "consumer sovereignty".) But there is no way of avoiding a clash of interests or of ideas; no search for "objectivity" via welfare economics will automatically solve problems of economic policy.[12]

The Application of Allocation Criteria

In recent years quite an extensive literature (**14-21**) has grown up, particularly in the United States, on the problem of optimal allocation in the public resource field. The general approach of a number of these works was extensively reviewed by Margolis (**22**) who, whilst commending the authors of the studies he reviewed for having produced "the best studies to date of the use of economic criteria", made the following adverse criticism:

> "A major weakness of the studies is the absence of a serious analysis of the institutions. This has marred their discussion of the constraints necessary to specify the investment criterion. It more seriously affects the relevance of their analysis. Rules which ignore the significance of organizational structure and goals for the selection and operation of projects, are Utopian . . . . It is common practice for economists to plead that *qua* economists they can deal with efficiency criteria subject to the constraints of whatever organizational structure exists. But it is also clear that changes in institutions or usages may result in large increases in efficiencies" (**22** p. 108).

Underlying this criticism, I feel, is a certain uneasiness as to the acceptability for the real world of using the commonly accepted welfare criteria for the allocation of resources. Even when the rigors of a perfectly competitive model are relaxed and the theory of the "second-best" is presented, one still feels that not all has been said. Yet, unfortunately, a

[12] *Cf.* Wiles (**13** p. 255): "'Plenty, not scarcity, is the essence of economics.' There is a sense in which this phrase is the cheapest of unscholarly rabble-rousing. But it contains a great truth. For while an emphasis on choice and scarcity is logically compatible with due insistence on growth, it is not psychologically so. Its implications are all wrong, and economists who are interested in choice are not in fact interested in growth, as Mr. Colin Clark taught us long ago in his brusque but salutary dismissal of the classical economics."

large superstructure has by now been erected on these shaky foundations and we are provided with ever more perfect formulae for the calculation of the "rate of return" on an investment project. "Discounted cash flow" to obtain the internal rate of return is now the accepted technique[13] (**23-25**).

I do not wish to disparage this as a technique of investment decision making—especially when the technique can be used with "shadow prices" when it is considered that, through imperfections, market prices do not reflect appropriate scarcities. Nor need it necessarily favour the *status quo* as opposed to "development" or "growth". But the fact remains that by its nature it can take account only of measurable[14]

[13] This finds the rate of discount which makes the present value of the stream of receipts accruing to the investment project over time equal to the present value of the cost expenditures over the same time period. McLean (**26**) gives a number of useful and simple examples of this technique.

[14] Even that most measurable item, the interest rate, seems most elusive when looked at closely. What should be the rate used for discounting? Steiner (**14** p. 37) maintains that the rate of discount "is the opportunity cost of deferred consumption (some would call it 'social time preference'), and should not be confused with a number of other interest rates that may be appropriate in other connections." He believes that it is different from the social opportunity cost of capital raised from government taxation, but is hardly specific as to what it *is*. Krutilla and Eckstein (**15** Ch. IV) apparently believe that the social opportunity cost of deferred consumption is equivalent to the social opportunity cost of taxation raised by the central government, and in the space of fifty pages of calculations demonstrate this to have been five to six per cent for the U.S. in 1955. (It is tempting to make a "back of an envelope" comparable calculation for Australia. The long-term U.S. government bond rate in 1955 averaged 2·7 per cent. This implied a margin of 2·3 per cent to 3·3 per cent for the "social cost of capital". In 1965 the average rate on long-term U.S. government bonds was 4·2 per cent. Supposing the same *absolute* margin to apply, the "social cost" would be 6·5 per cent to 7·5 per cent. The yield on Australian 20-year government securities in 1965 at 5·3 per cent is related to the 1965 U.S. long-term government bond yield return of 4·2 per cent by a factor of 1·262. Therefore the "social opportunity cost of capital" in Australia in 1965 was 1·262 times 6·5 to 7·5 per cent, i.e. 8·2 per cent to 9·5 per cent). But how many government projects would ever get under way if discount factors of these magnitudes were used! At present (or at any rate as recently as 1959) the U.S. Bureau of the Budget sidesteps any more complex analysis by taking a discount figure of 2·5 per cent (**17** p. 117; **19** p. 199) characterized by McKean (**19** p. 199) as "rather inadequate". Kelso, in "Economic Analysis in the Allocation of the Federal Budget to Resource Development" (**14** Ch. V) summarizes the various concepts of "social cost of capital". Patterson (**30** p. 45) states that "in view of the great importance which the actual rate of interest exerts on the general conclusions of an economic analysis involving large sums of moneys, it is my opinion that the actual rate of interest is more of a policy judgement to be made by government rather than by the economist". On the basis of a 5 per cent rate and a seed cotton yield of 2,127 lb. per acre on the Ord he reckons the 'break-even' point is reached (**30** p. 46). The yield of seed cotton per acre for the scheme for 1964/65 was 2,016 lb. (**31** p. 17) which would have implied a rate of interest of just under 4 per cent to attain the 'break-even' point. Dobb (**40** p. 38) states the belief that "a free market can and must provide the criterion as to what this relation (the allocation of resources) should be is a common illusion . . . ." Galenson and Liebenstein (**45**) criticize "discount" procedure by saying that "as soon as we leave the world of statics, maximizing output is no longer a sufficient criteria, nor does efficiency have the same meaning," and Malinvaud (**46** p. 229) declares that "in practice . . . . we do not know the prices and interest rates associated with the optimum programme that has to be determined. We merely take observed prices, sometimes changing them slightly. The justification for the calculation of the present values is therefore not fully convincing." See also the comments made by Koyck and Sen (**46** pp. 339-40).

variables and these, as should now be apparent, I consider to be less than fully adequate investment decisions. Moreover, even in the measurable field it is a moot point among economists as to which spillover or secondary effects are to be counted as net gains to the economy. In a fully employed economy it is clearly difficult to argue that there are any short-term net gains from a national point of view in respect of secondary effects as the diverted factors could have been producing something else elsewhere. But both from a regional point of view and from a *long-term* national point of view, the "knock-down argument" is not so self-evident.

Northern Development

At long last the discussion can come down from the general to the particular; but the percipient follower of the theme thus far developed will have little need of this section—its conclusions will already be clear!

To make any sense out of the "Northern Development" controversy one must regard the northern part of Australia as an underdeveloped country or, at least, as an underdeveloped region of a prosperous country. This is not to say its position is exactly analogous to that of say, southern Italy; it obviously is not. But at least some of the arguments used to advocate dispersion of development in Europe and the United States can be applied to this country. For instance, is it fair of Campbell (**27** p. 27) to ridicule the "vicious circle" arguments of the Forster Committee? The clearest statement of the Committee's views is set out as follows:

> "The measures are designed to break the vicious circle of there being no industry because there are no facilities and there being no facilities because there is no industry. If the north is to develop, this circle must be broken by someone and, if the government considers the north should be developed, it seems to us to be a proper function of government at this stage to break it. If the government will not accept this responsibility, it must accept the other responsibility—of doing nothing" (**28** p. 209).

The gravamen of Campbell's charge seems to be that "many of the disadvantages of which the Forster Committee talks, would seem to . . . . . be permanent features of the economic environment of the Northern Territory" and that consequently "it would be absurd for the government to attempt to remove them by subsidy" (**27** pp. 29-30). Yet is not the "vicious circle" of the Forster Committee a concept commonly accepted today among economists interested in economic growth and development? Has the contention made earlier on that economists interested primarily in allocation were *ipso facto* not interested in growth been proven?

External effects[15] of development policies cannot be lightly disposed of because their importance, as Campbell (**27** p. 28) says, is "far from clear cut". As Mishan pointed out:

[15] *Cf.* Bruton (**43** pp. 293-4): "If one includes such things as effect on morale, or political stability, then a virtually unlimited number of effects could be traced down and given some sort of value. A reasonable case can be made for the inclusion of any of these possible effects, as well as others, that might be mentioned, and in a specific case the inclusion of such effects would not only be reasonable, it would be accurate as well."

> "For a normative study, at any rate for a study that is manifestly concerned with human welfare, such reactions of men to the behaviour of others is no less relevant simply because it does not register on the existing economic mechanisms. Indeed, it is just because these reactions fail to influence the working of the market that they are[16] of particular interest to economists conecrned with resource allocation. External effects (external economies and diseconomies), broadly defined, encompass this desideratum. The larger they are in range and magnitude the smaller is the faith that can be reposed in the allocative virtues of the market mechanism even when working under ideal circumstances" (**4** p. 99).

It might be added that one's faith in the "allocative virtues of the market mechanism" is even further diminished when the question of *time* is brought into the discussion.[17]

And, as a report on regional development in the Common Market states:—

> "The external economies[18] created where a large number of firms or industries exist side by side stimulate further expansion, and this gives established industrialized regions a standing advantage. Indeed, as has often been said, the less developed areas will only become attractive to industry when they have become industrialized" (**29** p. 14).

The crux of the matter lies in the phrase of the Forster Report: "if the government considers the north should be developed it seems . . . . . to be a proper function of government . . . . [to start the process]." Government will have to make this decision not only on the basis of trying to maximize measurable economic returns in the short period but also on the basis of studying the longer term effects of different development policies. In Hirschman's words: "In these basic types of development decisions, it is . . . . not sufficient to supplement, qualify, and otherwise refine the usual investment criteria. We must evolve entirely new aids to thought and action in this largely unchartered territory of efficient sequences and optimal development strategies" (**32** p. 79).

[16] Perhaps Mishan ought to have written "should be" for "are"!

[17] "We wish strongly to emphasize the view . . . . . that the rational application of economic knowledge by way of making or discussing policy recommendations *must*, to some extent, or in some ways, involve prediction" (**11** p. 91), and "the purpose of the study of economics is to permit us to make predictions about the behaviour of economic phenomena under specified conditions" (**39** p. 23).

[18] *Cf.* Higgins (**42** p. 662): "To be sure, measuring external economies (positive or negative) may be more difficult for public projects, which measure nothing for the market, than for private projects; it may also be more difficult to measure external economies of agricultural projects . . . . than of industrial projects. But . . . . the difficulties of measurement are no excuse for not making the effort, since these are the factors relevant to decisions regarding priorities"; and U.N.E.C.A.F.E. (**44** p. 232): "Two main proposals for applying (the social product) criterion have been advanced. One is the *national product* (*or consumption*) test suggested by J. Tinbergen. This is based on an assessment of the project's direct, indirect and secondary consequences, all values of which are reckoned at 'accounting prices' . . . . Indirect consequences are those to be expected in the absence of further changes in total national income, while secondary consequences consist of the changes in production which are the consequence of the change in national income, both in the short and the longer run, connected with the new production."

It is because I consider the opponents[19] of northern development to be suffering from economic myopia[20] that I am obliged to join issue with them.

Although Davidson, for instance, does not explicitly reveal the model on which he is operating it is clear that throughout his detailed analysis he is implicitly assuming that economic welfare is to be maximized by short-period optimum criteria. The following quotation may be taken as representative of this attitude:

> "Even if it is considered desirable to produce cotton, sugar cane, safflower, rice or linseed under irrigation in Australia, the Kimberleys is probably the worst area to choose. Australia has large areas of potential irrigation land closer to centres of population where costs would be lower and where yields as high or higher than those obtained in the Ord River have been obtained" (**34** p. 199).

The analysis cannot be faulted so far as it goes; only it fails to take account of the possible development of northern Australia through the establishment of "poles of growth"—which in themselves might admittedly be "uneconomic" and require subsidization.

Conclusions

The ultimate objectives of a community or of a government cannot be restricted to those of the economic welfare criteria. Yet all too often when larger-scale investment projects are under consideration the economist feels himself constrained to offer advice *only* on the basis of those welfare criteria whose limitations he will, at another time and place, candidly admit. The economist *must* help the formulators of policy by considering the results of certain lines of action, and his technical skills (e.g. his ability to manipulate instruments like "discounted cash flow") are surely of assistance in determining some of the costs and benefits. But can the aims of public policy always be identified with the postulates of the Paretian model? "It is open to doubt" says Wiseman "whether the interest of statesmen in the welfare optimum is as great as that of academic economists" (**36** p. 456). And he continues: "However, the post-war interest in growth problems has resulted in the development, not of more sophisticated models in which growth and choice both have a place, but rather in the creation of two broadly independent analytical approaches, one treating growth by macro-economic techniques, the other concerned with the refinements of Pareto-type welfare systems. Consequently, we can now provide the policy-maker with two sets of broadly unrelated propositions, one dealing with growth and the other with choice, and neither capable of easy application in a context requiring admission of both as policy aims" (**36** p. 459).

To me, whilst *both* approaches are certainly desirable, the growth/

[19] For example, Campbell (**27**), Musgrave and Lewis (**33**) and Davidson (**34**).

[20] Partly in the sense used by Strotz (**35**). *Cf.* Dobb (**40** p. 259): "To discount the future may or may not be a common defect of human nature but that it is a *defect* seems certain—a national defect due to weakness of will or of imagination. For the community as a whole to discount the future (i.e. to give less weight in its planning to income or output merely because it accrues at some future date) would be an irrational and short-sighted procedure."

development approach is the more significant in the Australian context.[21] And when it is Northern Development which is under discussion, I would suggest that the words of Marshall are still apposite:

> "The indirect are often much more important than the direct effects; in some of them the economic element predominates, and in others the ethical and the political. It is impossible to discuss . . . .[22] policy without reference to all these elements" (**37** p. 367).

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