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Econ. development

THE ROLE OF THE UNIVERSITY AND ITS ECONOMISTS IN ECONOMIC DEVELOPMENT

by

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THE ROLE OF THE UNIVERSITY AND ITS ECONOMISTS IN ECONOMIC DEVELOPMENT

by

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It is an honor and a pleasure to have been asked by the University of Guelph to deliver the J.S. McLean Visiting Professorship Lecture in memory of President McLean of Canada Packers. It is an honor because of the esteem with which President McLean was held; and also because of the high esteem which the academic community has for the University of Guelph and for the Ontario Agricultural College with its department of Agricultural Economics. At my own university, we judge the department of Agricultural Economics of the University of Guelph by the students they send us for graduate work. Their quality is high and their training good. My pleasure in being here arises out of my enjoyment of academic exchanges with the agricultural economists at Guelph and from some extremely pleasant memories of vacations in Ontario and in all of Canada. The fishing and scenery are wonderful.

I can be most helpful, perhaps, by first being clear as to the meaning which I attach to the title assigned to me. I will then analyze the philosophic background underlying conflicting views concerning the role of the university in economic development. After this analysis I will state a philosophic basis for outlining what I regard as the appropriate roles of a university in economic development and then make some specific recommendations as to how a university should be organized to fulfill those roles. Finally, I will look at what economists can do to help a university play its roles in economic development.

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*The helpful comments and criticisms of Professor L.L. Witt, Department of Agricultural Economics, Michigan State University, are gratefully acknowledged.

I should indicate that I am primarily an economist and not more than an amateur philosopher or administrator despite the importance philosophic arguments and administrative considerations play in the subject to which I address myself this afternoon. My qualifications as a philosopher result initially from a deep interest in the subject and from spending a sabbatical leave on it, in addition to reading rather extensively in philosophy as I have pursued my primary career of economist. Administratively, my experiences are limited largely to directing substantial economic development projects for Michigan State University, domestically and overseas, some of these involving more people, more money and, I am sure, more administrative difficulties than are found in a typical university department of agricultural economics.

The Meaning of Words and Phrases

In drama, roles are played by actors. In playing these roles, actors take on the character of the part they are playing. Yet their ability to take on a role is sometimes restrained by the underlying philosophies which determine their own characters. Similarly, both the nature of a university and the roles it plays are determined by the underlying philosophies which guide it. Thus, it is necessary to look at the philosophies which determine the characters and the roles which a university plays.

The word university will be understood to mean an organization whose fundamental purpose is to produce and distribute knowledge. However, I had better be specific as to what kind of a university I am talking about, namely a university such as the University of Guelph or Michigan State University in a developed country.

The phrase economic development in my title is taken to mean an increase in capacity to attain objectives — all objectives, not just monetary objectives or objectives easily measurable in terms of money. According to this definition there can be no conflict between development and such conditions as, say, environmental quality because increased capacity to attain objectives includes capacity to improve environmental quality. Perhaps my title would be better if it

simply said development. I am happy that the title does not indicate foreign economic development because I want to consider the role of the university with respect to both foreign and domestic economic development. Michigan and Ontario are not through developing; neither are Canada and the U.S.

Philosophic Background

When academicians, in their senates and councils, and when administrators begin to talk about the appropriate character of the university and its roles in economic development, they almost invariably base their arguments on different underlying philosophies. These philosophies originate in deeply hidden, sometimes unknown, and poorly understood metaphysical presuppositions and premises. When these are not explicitly understood, the result is almost endless disagreement and confusion, often emotional in nature. In the past few years, I have participated in a number of conferences on today's subject which produced little in the way of agreement largely because the participants did not understand the deep philosophic basis for their disagreements.

In order to avoid such confusion and disagreement today I want to inventory some of the important philosophies which have been used at such conferences and to state a philosophic position which appears to be appropriate for a university to use in establishing its character and the roles it is to play vis-a-vis economic development.

The reader will find it advantageous to consult Figure 1 as he goes through the following textual material. Figure 1 indicates the kinds of intellectual activity emphasized by each of the five philosophies I will discuss. Down the left hand column the headings have to do with (1) abstract (theoretical), (2) descriptive and (3) prescriptive knowledge. Under the abstract heading (which is restricted to the non-prescriptive) there are normative and non-normative subcategories. Similar categories are found under the descriptive (also non-prescriptive) heading. Abstract systems do not purport to represent reality in and of themselves. For instance, in my own field, economics, we employ an abstract maximization calculus which is the same abstract system found in mathematics. In and of itself, this system

Fig. 1: Kinds of Knowledge Attainable According to Various Philosophies

Kinds of Knowledge	Normativism	Philosophic Position					
		Positivism	Conditional		Pragmatism	Existentialism	6th
			Normativism	Positivism			
NON-PRESCRIPTIVE						The emphasis is on "existence" and identity of individuals on existence rather than on the "essences" of conditions, situations and things other than people.	
Abstract (theoretical)							
Normative (about good and bad)	Attainable	Attainable[2]	Attainable	Attainable	Void[7]		Attainable
Non-normative (positive)	Attainable[1]	Attainable	Attainable	Attainable	Void[7]		Attainable
Descriptive							
Normative (about good and bad)	Attainable	Void	By Assumption	Attainable	Void[7]		Attainable
Non-normative (positive)	Attainable[3]	Attainable	Attainable	By Assumption	Void[7]		Attainable
PRESCRIPTIVE (about right and wrong)							
Abstract (theoretical)	Attainable	Attainable[2]	Attainable	Attainable	Attainable		Attainable
Descriptive	Limited[4]	Void	Limited[5]	Limited[6]	Attainable		Attainable

1/ In many but not all forms of normativism but not the primary interest

2/ But of no potential descriptive value

3/ In many but not all forms of normativism

4/ Limited by the absence of non-normative information in some forms of normativism and by lack of attention to the non-normative in other forms

5/ Limited to assumption on the normative side

6/ Limited to assumption on the non-normative side

7/ Void in the sense that pragmatism perceives of normative and non-normative truth as interdependent in a problem-solving, prescriptive context.

is not descriptive of the real world. It becomes descriptive when primitive terms are identified with variables in it. Once primitive terms which have undefined, experiential meanings, such as weight, volume, utility and mass are used, the abstract maximizing calculus can be converted into descriptive production or consumption economics. As prescriptive knowledge is by nature both normative and non-normative, the sub-headings under it in Figure 1 are abstract and descriptive. As Figure 1 indicates, in a summary way, that each of the five broad, rather well established, philosophies we will consider have definite shortcomings and impose restrictions on the strengths of others, we will state a sixth philosophic position to use in attempting to define the role of the university in economic development. It will be based more on what successful economic development personnel and workers do than on what philosophers say. And I will not apologize for this, because one of the important contributions which philosophers make in society is that of developing formal systems to describe what man does.

It makes some sense to consider these philosophies in roughly the historical order in which they have appeared on the academic scene. Thus, the first considered will be the various normative philosophies which dominated the medieval universities. The concern of these philosophies is with "goodness" and "badness", "right" and "wrong", the "beautiful" and the "ugly". These concerns are expressed in the study of theology, ethics, law and the arts. Normative philosophies are still important, though far from dominant, in our universities. By and large, these philosophies hold that objective knowledge, both abstract and descriptive, of goodness and badness is possible. Since prescriptive knowledge about what is right and wrong depends on both non-normative and normative knowledge, normativism implies that objective prescriptive knowledge is possible.1/ When certain

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1/ I follow Lewis' distinction between "good and bad", on one hand, and "right and wrong", on the other. See, Lewis, C.I., The Guard and Nature of the Right, Columbia University Press, New York, 1955. What we regard as right is prescribed. The "right" may be bad if it is the least bad that can be done. And conversely we do not prescribe as "right" an act which is "good" if it is less good than an alternative.

forms of normativism hold that non-normative or positivistic knowledge is not possible, they lose that part of rational prescriptive power which depends on non-normative information. By non-normative knowledge, I mean that kind of knowledge about the past, present and future characteristics of situations and conditions which does not deal with goodness and badness, per se. Some persons call such knowledge "positive". Due to either their neglect of non-normative information or to taking the position that objective non-normative information is impossible, normativists have tended to lack adequate non-normative knowledge to work on the problems of society in general and on economic development problems in particular. It is interesting to note that this partially explains the small damage inflicted on the economic development of U.S. and the little benefit conferred on the economies of Nova Scotia by the migration of high proportions of those with advanced normative educations to Nova Scotia from the thirteen original U.S. colonies during the Revolutionary War.

Neglect of non-normative knowledge by the medieval universities led eventually to the development of positivism which concentrates on non-normative knowledge. Positivism asserts that objective normative knowledge is impossible. Within the university, positivism has made a great contribution by making places for and by defining roles of such disciplines as chemistry, physics and astronomy — the hard sciences — and biology, botany and genetics — the life sciences. These disciplines greatly increased non-normative knowledge with research methods and techniques based on a positivistic philosophy. However, strict adherence to positivism prevents attainment of objective prescriptive knowledge since objective prescription requires objective normative as well as objective non-normative knowledge. Actually, strict positivism precludes problem definition as well as prescriptive solutions to problems; thus, positivism provides an inadequate philosophic underpinning for any diagnostic problem-solving endeavor such as medicine, engineering, architecture, or other direct attacks on problems and issues of society, including those having to do with economic development. Fortunately, positivism is now regarded as passé by many philosophers in spite of its current ascendency in many departments

commonly referred to as sciences of many universities and among many faculty members of those universities and departments. 2/

Compromises with both normativism and positivism are important in our universities. Such compromises are made by positivistically and normativistically inclined persons and organizations in order to better define and prescribe solutions to problems, including those of economic development. Some normativistically inclined investigators, departments and universities assume or take as given answers to non-normative questions and, by so doing, are able to define and sometimes solve problems, albeit without much logic or appeal to experience or observation on the non-normative side. Similarly, those with positivistic inclinations sometimes assume or take as given answers to certain normative questions; as a result they too are able to define problems and reach solutions. In their case, however, they neglect the use of logic and appeal to experience or observation on the normative rather than on the positive side. In our colleges of agriculture and business administration, we find substantial adherence to conditional normativism, i.e. a philosophy which accepts the possibility of objective non-normative information while assuming answers to normative questions as a basis for defining and solving problems. Practical university graduates in business and governmental leadership roles who have been trained by both normativists and positivists are sometimes successful in avoiding the restrictions of both philosophies and achieve great problem-solving success by tackling problems with the strengths of both approaches. Less-educated, practical men do the same thing, and more often. Other graduates unfortunately find themselves constrained by both philosophies in such a way that they do not benefit from the strengths of either. The escape of some uneducated, practical men from the restrictions of both normative and positivistic philosophies can be so beneficial as to more than off-set their lack of acquaintanceship with the logical analyses and descriptive knowledge possessed by either the positivists or normativists who try to attack problems by assumption as above.

2/ Kaplan, Abraham, "Positivism", International Encyclopedia of the Social Sciences, Vol. 12, p. 394.

There was a reaction against both the normative and the positivistic philosophies which dominated European and the more European forms of North American education. It was expressed in Pierce's pragmatism which, through John Dewey, became the basis for much of that which is distinctive about public education in large parts of the U.S. and Canada as distinguished (until recently) from England, the Continent and the more traditional forms of private education existing in the deep South and on the East Coast of the United States. Pragmatism is based on the metaphysical presupposition that normative and non-normative knowledge are interdependent in the context of the problems which they are being used to solve. Along with this interdependence, pragmatism attaches great importance to the test of workability in solving problems. The strength of pragmatism lies in its focus on the problems of society — on its implied activism — and it is this which has made public education in Northern, Central and Western U.S. and much of Canada so very relevant to the problems of society. However, pragmatism also has been restrictive — it has concentrated education on problem-solving techniques and has tended to make all knowledge relative to problems thereby downplaying the hard descriptive and abstract, non-normative and normative knowledge of the traditional academic disciplines. Pragmatism makes the positivistic knowledge of physicists and chemists and the normativistic knowledge of theologians, jurists and humanists all relative to the problems of the day. This relativism makes problem-solving techniques more important than knowledge which is conceived to be as ephemeral as the problems which render it meaningful. While pragmatism has had great impact on colleges of education, it has been stoutly resisted in the positivistic hard sciences. Members of the social sciences have put up some resistance. The result is that the non-normative information of the physical sciences has been taught more effectively than the non-normative information of the social sciences, particularly in primary and secondary schools. The humanistic disciplines too have resisted pragmatism but as they are taught primarily at the post secondary levels and mainly tangentially at the primary and secondary levels, the resistance of the humanists has not had much impact on primary and secondary school teaching and on the undergraduates who determine, increasingly, the character of our universities. The lack of solid descriptive knowledge concerning our political, economic and

social systems, is, in my opinion, an important source of much that is currently unfortunate about the character of the "violent minority" among university students and, for that matter, among faculty members.

More recently, and in Europe as well as in North America, existentialism has become important in universities. Starting out with the proposition that one's existence is the one indisputable fact he has, existentialism places great importance on the establishment of self-identity by individuals. As such, it contrasts sharply with the positivist's interest in the non-normative characteristics of things, conditions and situations and with the normativist's interest in the goodness and badness of conditions, situations and things. The existentialist emphasis is on individuals and on the identity of individuals — on "existence" rather than on the "essences" of things, situations and conditions. The importance of establishing identity, in turn, elevates the importance of freedom to existentialists. To some of them, knowledge (both normative and non-normative) is a source of greater freedom for the individual as it helps him to establish his identity by making better choices over a wider range of alternatives. By contrast, in a special and, some might say perverted, extreme form of lay existentialism, logic and experience or observation are viewed as constraints on the freedom of an individual to establish self-identity. For example, all of us are acquainted with certain people and, I am sorry to say, with some faculty members who are so concerned with personal and academic freedom that neither logic or appeal to experience is permitted to interfere with their quest for freedom and who lose their freedom by ignoring logic and experience. While Marxism is not a philosophy it has mixed philosophic premises and implications. Conceptually, it has existentialist elements in that great stress is placed on the individual[3/]. In practice, however, Marxism has been authoritarian and, hence, anti-existential with elite minorities restraining the freedom of majorities (made up of individuals) in manners very similar to those of fascism, the equally extreme, authoritarian and non-existentialist right. As far as universities are con-

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3/ May, Rollo and Basiscu, Sabert, "Existential Psychology", International Encylopedia of the Social Sciences, Vol. 13, pp. 76-83 and 77 in particular.

cerned, the broad conflict between individualism and socialism (between persons and groups) is important and poorly understood as is the very different conflict between authoritarianism (right or left) and democracy. Democracy is a way of working out the conflict between individuals and groups whereas authoritarianism is a way in which an individual or elite group imposes its will on a majority of individuals. A university working on economic development in the world of today must inevitably come into contact with these conflicts both abroad and at home.

While this discussion of philosophies is not complete, it is complete enough for us to see that most of the major philosophies which have persisted have done so because they have made real contributions and that, therefore, none of them can be completely rejected in discussing the role of a university in economic development. The discussion is also complete enough for us to see that each philosophy imposes, or is likely to impose, severe restrictions on a university's ability to use other philosophies in obtaining solutions of problems falling under the general rubric of economic development. Positivism and normativism, for instance, would tie one of our hands (albeit different ones) behind our back, thereby reducing our effectiveness. Those who argue, in either the words of the classical dark ages or of the age of enlightenment, that the business of the university is purely normative or purely positivistic keep us from reaping the benefits of both.[4/] There is also the danger that their stress on one half or the other of the necessary ingredients for solving problems will keep us from actually addressing ourselves to the problems and issues of society. Still further, such advocates deprive us of the valuable feedbacks which we get from working on the problems of society. These feedbacks reveal deficiencies in our stores of disciplinary knowledge — in our theories and in our descriptive information — whether that information be normative or positive. Likewise, those conditionalists who urge us to assume answers to either normative or positivistic questions and then refuse to investigate them also tie one of our hands behind our back by substituting

4/ See Barzun, Jacques, "Tomorrow's University, Back to the Middle Ages?", Saturday Review, November 15, 1969, pp.23-25.

assumption for experience and observation. In effect, they urge us to risk the consequences of what can very well be arbitrary dogmatic assumptions.5/ Also, the pragmatists who insist that answers to normative and non-normative or positivistic questions are always relative to each other in a problematic context would deprive us of much that positivists and normativists have to offer, one consequence of such deprivation being concentration on problem-solving — upon an unduly specialized teaching and research technique — at the expense of solid subject matter. Finally, contradictory as it may sound at first, the existentialist emphasis on freedom to establish self-identity often restricts freedom to attack the social issues associated with economic development in two ways. First, existentialism sometimes makes "freedom to establish identity" the problem rather than such issues as population pressures, racism, water pollution, inadequate income to convert acute nutritional deficiency into buying power for food, etc. Such real social problems require logical, well-thought-out, abstract concepts and careful descriptive work for their solution instead of the illogical, contrary-to-experience activities of persons so "hung-up" about personal freedom that they are unwilling to let logic, experience and the social interests of groups interfere with their own ambitions and pleasures. Secondly, many of these problems can be solved only by group actions which restrict the freedom of some individuals — for example, how can land ownership be redistributed from a few large land owners to large numbers of landless peasants without restricting the freedom of landlords?

Just as undue adherence to any one of the philosophies discussed above is damaging, so unthought-out combinations of philosophic positions may also be very detrimental. Take for instance, the positivistic position that there are no objective answers to questions about goodness and badness. Combine it with a pragmatic emphasis on technique to the exclusion of knowledge independent of problems. Then mix in an existentialist stress on identity so extreme that logic and experience are conceived as restraints on freedom. The results can be

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5/ Parsons, Kenneth, "The Value Problem in Agricultural Policy", Agricultural Adjustment Problems in a Growing Economy, The Iowa State College Press, Ames, Iowa, pp. 285-299, particularly p. 296.

lethal for a university, a department, a program or an individual. Influenced by such philosophic mixes, academicians wax eloquent and emotionally prescribe "solutions" to social problems arrived at without the restraints of analysis and experience. Their strongly-held normative and/or positive concepts are put beyond logic and the test of experience while their pragmatic emphasis on problems and their existentialist stress on freedom justifies almost any way of avoiding the discipline of logic and experience. Under the influence of such a philosophic mix, logical analysis and appeals to observation and experience are replaced by barricades, and demonstrations become academic methods. Further, even professors and students abandon logic and the lessons of experience to flout the laws and regulations which protect individual men from encroachment on their freedom by each other and engage in forceful and sometimes violent attempts to enforce their wills on others. Even ardent pacifists may practice violence when guided by such philosophic mixes!

A Philosophy for the Developmental Work of a University

From the above it is clear that the philosophies underpinning a university are important and that many of the commonly held philosophies and combinations thereof are defective. It is also clear that ad hoc and haphazard combinations can be dangerous. Thus, I attempt in this section to state a thought-out philosophic position based on the experiences of developmental workers and agencies which is appropriate for use in establishing the role of a university and of its economists with respect to economic development. Column 6 of Figure 1 describes this philosophic position; it exploits the strengths of the first five without accepting the constraints they impose on each other. I believe this kind of philosophy to be essentially what undergirds those universities, departments and faculty members who have demonstrated considerable success in doing work on economic development problems whether those problems be those of a developed country such as Canada or those of an underdeveloped country such as Nigeria or Colombia. The observations I have made on successful workers and agencies were mainly in the United States, England, India, Nigeria, Kenya, Ethiopia, Tanzania, Colombia, and Thailand and in such developmental agencies as the USDA,

TVA, Norwegian Institute of Agricultural Economic, Rockefeller Foundation, Ford Foundation, MSU, the University of Kentucky, the University of Chicago, the University of Manchester, the Economic Development Institute of the University of Nigeria, Resources for the Future, USAID and the International Bank for Reconstruction and Development. Somehow or another, the successful workers in these universities and agencies have managed to exploit the strengths of various philosophies while avoiding their constraints and weaknesses. I am not at all sure that what I am going to outline is a philosophy; however, here are the main elements6/.

First, the metaphysical possibility of objective descriptive normative as well as of objective descriptive non-normative (positive) knowledge is accepted. Second, descriptive concepts, whether normative or non-normative are accepted or rejected on the basis of the following four tests: Are they logically consistent with other accepted concepts? Do they agree with new knowledge based upon new experiences and observations? Do they work when used to solve problems? And, finally, are they understandable and clear enough to be accepted by others with access to the same analyses, experiences and observations and faced with the same problem i.e. can they be transmitted as acceptable from one person to another? While the four criteria I have just listed are partially pragmatic, they do not preclude application of highly productive, positivistic techniques to the acquisition of both non-normative and, for that matter, normative knowledge. Third, much of the existentialist position is accepted by many of the most successful workers on economic development. Individually, self-identity and freedom are accepted as important while rejecting the idea, sometimes found in association with existentialism, that freedom is constrained by logical or descriptive knowledge or by the laws and regulations of societies and communities (including universities) which prevent one person or group of persons from infringing

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6/ I am deeply indebted to Professor Lewis K. Zerby, Department of Philosophy, Michigan State University, who has done much to increase my understanding of philosophy at MSU, in Nigeria and in connection with a sabbatical devoted to the study of philosophy in England under a Rockefeller Foundation Grant.

on the freedom of others. Fourth, despite the importance of the existentialist position, it is also accepted that the identity, interests and values of groups as well as of individuals are important and to be given consideration. Fifth, my contact with the successful economic development institutions and persons indicates that the problems of economic development are generally conceived (a) as interdisciplinary and (b), in substantial part, as those of people (as entities) and of groups of people or organizations. Sixth, my contacts with the problems of economic development and with successful economic development problem-solvers indicates that the problems are dynamic and everchanging. As a consequence, the appropriate mixes of disciplines to be used in solving economic development problems of people and societies and groups change continually.

General Roles for a University

It is now time to be less philosophic and discuss the general roles of the university before discussing its more specific roles vis-a-vis economic development in the next section.

By definition, the business of the university is to produce and distribute knowledge — to perform the services of teaching and of doing research. Acceptance of the pragmatic argument that at least some knowledge is relative to the problems at hand means that the test of workability is relevant. This has strong implications for universities. It means that, as producers of knowledge, universities must be in contact with the problems of society and that, as distributors of knowledge, they must teach in relation to problems, at least part of the time. This follows because the truth and meaning of part of the knowledge to be distributed is relative to the problematic contexts in which it is considered. Accepting that knowledge is relative to problems is something more than recognizing that it is relevant to problems. When a bit of knowledge is relative to problems — its truth (acceptability) depends on which problem it is being used to solve. This is quite different from saying that it is relevant because it can be used to solve a problem or irrelevant because, though true and acceptable, it is not useful in solving the problem. An example of knowledge which is relative to problems is the concept that light

travels in a straight line. For purposes of solving my problems of poor eyesight, my optometrist uses this concept to prescribe lenses to solve my problem; however, for certain problems encountered in physics and astronomy, the concept that light travels in a straight line has had to be rejected. This relationship between knowledge and problems means that universities must deal with the problems of people, as individuals and in groups, as well as with knowledge of the normative and non-normative characteristics of conditions, situations and non-human things.

Our sixth position permits utilization of the strong points of positivism and normativism and does not require total acceptance of the pragmatic presupposition that all information is relative to the changing problems of society and people; this too, has important implications for a university. It maintains a firm and enduring place in the university for disciplines, such as physics and ethics, which utilize positivism and normativism, despite technique-oriented pragmatists from colleges of education.

The Roles of the University and Administrative Structures with Respect to Economic Development

It is time now to consider development more directly and to be more specific about the roles of the university with respect to it. In being more specific, I am also going to consider the administrative structures through which a university plays its roles as well as the roles themselves.

Roles in Economic Development: — Development (both foreign and domestic) proceeds from solutions of a changing body of problems which currently includes the population explosion, world-hunger, illiteracy, inequality, environmental pollution, racism, authoritarianism of the right, authoritarianism of the left etc. We have argued above that a university must have contact with problems of people and with the problems of organizations and groups of people such as cities, communities and nations. The problems of development are no exception. How does a university maintain this contact with the problems of development?

One way is to undertake research on the problems of groups of people and agencies. Sustained ability to do such research requires earning support from legislatures or parliaments, philantrophic organizations, administrative branches of government, private agencies and from other agencies willing to make grants or contracts for research on such problems.

A second way, which is related to the first, is to undertake research on the economic development problems of individuals. Ultimately, ability to do this also requires the university to earn support from public, private and philantrophic organizations.

A third way for the university to make the necessary contact is to have knowledgeable people serving as consultants on assignment to non-university public, private and philantrophic agencies dealing with economic development programs. In making such secondments, the university both distributes and acquires knowledge. The university which does not furnish knowledgeable people for this purpose is less efficient than it could be in carrying out its functions of producing and distributing knowledge. I should note in passing that much time is lost and resources wasted in arguments between academicians and practical men of government and business. Though university participation is required for the good of a university's research and teaching programs, universities are not in a position to take over and run governmental, industrial, agricultural and philantrophic organizations. It needs to participate but it does not have the time or the resources to run such agencies if it is also going to perform its primary functions of producing and distributing knowledge. On the other hand, the private, governmental and philantrophic organizations concerned with development problems are not prepared to run a university and to supply the necessary disciplinary knowledge and the skilled people to such agencies. Supplying these is the business of the university.

Still a fourth way for universities to make the necessary contact is to train personnel for development agencies and then to keep in close contact with them in order to get the feedback necessary to keep the university in touch with current problems and to update its stock of knowledge. In many instances, specific training institutes, programs etc. will be required

and the university should be willing to play the role of providing such facilities and programs.

A fifth way for the university to maintain contact with the problems of society is actually to execute a limited number of projects or contracts of a problem-solving nature. These contracts are sometimes to establish educational research institutions, to do feasibility studies and to assist with planning in ministries of education, economic development and agricultural industries etc.

A sixth way is for the university to employ experienced problem-solvers as consultants, visiting professors and as regular faculty members.

Structuring the University:— Now, assuming that a university has decided to become involved in development, the question arises as to how it should be structured to play that role. Though this question has been with us for a long while, it has never been adequately answered by the U.S. Land Grant universities despite their long standing commitment to help solve domestic problems of economic development.7/ It has arisen again in connection with Land Grant university involvement in the economic development problems of the less developed countries. Both the Rockefeller Foundation, in its university development program, and the Ford Foundation, in extending assistance to universities, also encounter questions about administrative structures.

The current almost universal dissatisfaction with how universities are organized to attack both domestic and international development problems indicates that faculty members

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7/ Bonnen, James, "Present and Prospective Policy Problems of U.S. Agriculture: Viewed by an Economist", Journal of Farm Economics, Vol. 47, No. 5, December 1965, p. 1129. After stating that if the Agricultural Establishment (USDA, Land Grant System) is to survive, it "must exhibit far more relevance to society", he noted that if it did not it would deserve its death and a headstone inscribed "The Agricultural Establishment of the United States: its promise exceeded its performance and, falling into social irrelevance, it took its own useless life. RIP".

and administrators have seldom performed very well in structuring universities. The difficulty is not primarily with structures for undergraduate and graduate teaching programs; instead, it is with the structures for working on the problems of development. The failure in this latter respect is partially due, I believe, to adherence to the unduly specialized philosophies previously discussed and/or to haphazard combinations of those philosophies. Attempts to restructure universities to play such roles as outlined above almost always (1) create uneasiness and fears among faculty members and administrators and (2) generate arguments based on the various philosophic positions and associated difficulties already discussed. Our attempt to sort out the different philosophies tells us something about how to handle the problem of structuring the university to play its roles as well as what roles it should play.

Historically, universities have had disciplinary departments while people and societies have had problems. As solution of the everchanging problems of development requires an everchanging mix of different disciplinary skills and knowledge, the disciplinary structure of the university is seldom, if ever, appropriate. However, the solution to the structural problem for a university is not simply one of giving it a problematic structure. Such a structure would be too unstable to work. Another reason why a solely problematic structure would not work is that the solutions of problems require the kinds of knowledge and skills produced by the disciplinary departments of the university but unlikely to be produced by problem-oriented and, hence, temporary administrative units. This means that the university must have <u>both</u> disciplinary and problematic organizations.

The principles which I see to follow in structuring a university to play such roles are:

(1) to preserve the disciplinary organization of the university by maintaining its disciplinary departments
   (a) as the permanent home of problem-solving workers
   (b) as a source of trained people with different disciplinary skills
   (c) as a source of required abstract and descriptive disciplinary information

(2) to provide a minimal, central organization in the university as an integral part of the university's administrative structure. For problems requiring personnel and information from disciplines in more than one college, this organization should probably be in the president's or vice chancellor's office in order to command the needed mixes of disciplinary skills not under the control of separate college deans. It is needed to assemble the interdisciplinary teams, to terminate projects and to control the deans involved. Project origination, however, should be at any level within and, for that matter, outside the university as the central organization simply would not have the necessary personnel, contacts, experience and skills to conceive, create and develop all needed projects.

(3) to provide a still more minimal, central organization in each college which is likely able to provide, solely from its own resources, the interdisciplinary mixes required to attack problems. This organization should be in the dean's office and, as part of that office, superior to (1) such functional sub-deans as are concerned with teaching, research and extension (for development involves all three) and (2) the department heads supplying the necessary personnel. The organization is needed to assemble the interdisciplinary teams, terminate projects and control the department heads involved. Again, project origination can be at any level within the college and, for that matter, outside the central college organization which would not have the necessary personnel, experience or skills required to conceive, create and develop all needed projects.

(4) to give project leaders, using resources from more than one college or department, full control over money and personnel for the duration of the project or until they (the project leaders) have proven themselves incompetent. I do believe that, for the life of the project, control over both money and people can not be left to the separate competing deans and/or department heads supplying part <u>but not all</u> of the different disciplinary skills required for the problem at hand. The deans, under the administration of the president's office, or department heads, under the administration of the dean's office, should exercise long-run control over personnel and influence the

establishment of the project but, once established, execution of the project should be left up to the project leader. Deans should stay out of intercollege projects and department heads should stay out of interdisciplinary projects within colleges because of the dangers that they will sterilize the project in (1) pursuit of disciplinary or college objectives and (2) administrative competition with each other. Deans or project leaders reporting to deans can administer interdisciplinary projects drawing only on departments under the control of the dean but deans should not administer projects drawing on more than one college. Presidents or project leaders reporting to presidents can administer intercollege projects but not interuniversity projects. I speak from years of experience as director of various projects. When project personnel come from more than one disciplinary department, the project leader has to be in command of the project or the department heads will tear it apart. Similarly, when personnel come from more than one college, the same is true for the relationships between deans and project leaders. And, when personnel come from more than one university, the generalization holds for the relationships between project leader and the various university administrations. These are not the typical, biased comments of a professor complaining about administrators. They are, instead, the comments of an experienced project and institute director or administrator. The principle is to let a department head or a project leader reporting to him administer departmental but not interdepartmental problem-solving teams — to let a dean or a project leader reporting to him administer college but not intercollege problem-solving teams — and to let a president or a project leader reporting to him administer university but not interuniversity problem-solving teams; instead, the directors of projects must be given enough control over financial and personnel resources to execute the problem-solving responsibilities they are asked to assume. In the case of interuniversity projects, the project leader must be responsible to an outside administration agency or council truly superior to all of the universities supplying personnel to the project.

Potential project directors should realize the above and refuse to direct problem-solving projects and insti-

tutes without (1) control of the resources needed to execute their responsibilities and (2) a clear understanding of administrative lines of command. The sooner they do this, the better for all concerned — the universities, colleges, departments, project directors and, above all, for those who expect problem-solving help from university communities.

Lest the listener think the above is merely a matter of opinion, I suggest that he check the history of the following projects for successes, problems and failures: the University of Nigeria project at Michigan State, the Interstate Managerial Study of the North Central Farm Management Research Committee, the Institute of Agriculture and Economic Development at MSU, the Soil Conservation Project of the North Central Farm Management Research Committee (circa 1951), The Economic Development Institute at the University of Nigeria, The African Mechanization Study at MSU, the Latin-American Marketing Project at Michigan State, the Consortium for the Study of Nigerian Rural Development (Kansas State University, Colorado State University, University of Wisconsin, Michigan State University), and the Agricultural Sector Model Project at MSU. Some of these projects are or were departmental, some interdepartmental with and without college-level administration, some intercollege, and some interuniversity. In the above sample of projects representing a very much larger universe, failure to give control over personnel and money to the project leader has resulted in administrative vacuums seldom adequately filled by competing administrative equals none of whom bore fundamental responsibility for success or failure of the project. Conversely, where resources, control over resources and responsibility were placed in the hands of the project leader, the failures associated with administrative vacuums seldom materialized.

(5) to regard with skepticism, special administration committees established for a project by administratively equal, disciplinary, college or university units providing personnel for a project. Such committees are as likely as the administrative heads (see 4 above) of those units to engage in disciplinary empire building, carry out de-

structive administrative competition and to leave administrative vacuums. Further, at best, they are likely to have only meager administrative power with respect to the units they represent.

(6) to give no tenure to personnel in a project and no permanent status to the project is a principle corresponding to 4. When a problem is solved or disappears, the project and its administration should be terminated and the personnel involved should return to the disciplinary departments, colleges and university homes from whence they came. The last thing we need are defunct administrative structures attesting to the past existence of problems but now involved in self-perpetuation by pretending they, like academic disciplines, have long-run contributions to make to the abstract and descriptive knowledge of society.

(7) to provide for work on the problems of the individuals. Domestically, in the U.S., we learned this a long time ago in connection with the agricultural extension work of the Land Grant universities. The lesson has had to be relearned in our institutional building and research projects overseas and is now being learned, still a third time, in the U.S. by those working with the disadvantaged, the disenchanted, drug addicts etc.

(8) to distrust those who draw sharp distinctions between foreign and domestic development work and who would require special permanent roles and structures for doing each. I am sure that the differences among either foreign or domestic economic development problems are far greater than the consistent difference between problems of foreign and domestic work. We really have no need for empire builders who would develop support for domestic economic development work by attacking the work of those working abroad or, conversely, for that other kind of empire builder who attempts to establish an empire for doing economic development work in the LDC's by overly differentiating his product from that of domestic workers. Domestically and internationally, the needed stresses are on (a) commitment to problem-solving (b) disciplinary excellence and (c) recognition that problems are interdisciplinary and ephemeral and that, hence, disciplinarians will often temporarily have to join problem-solving teams.

(9) to be wary of area centers and economic development institutes. In addition to the dangers of neither solving problems nor functioning as disciplines, institutes and centers also encounter temptations to perpetuate themselves for their own sake. Their personnel are often uninterested in the problems of the people or groups of people. When they do get involved in such problems, such institutes and centers are often inadequately financed and staffed to completely solve a problem even if they succeed in establishing an interest in it. This follows because of the changing interdisciplinary mix required to handle emerging problems — for an institute or center to have as much capacity to form interdisciplinary problem-solving teams as a university, it, in effect, has to become a university within a university. Candor also requires that I point out that institutes and centers sometimes become dumping grounds for people, with little teaching, research or administrative talent, who nonetheless want to become involved in such institutes and in administration. Currently, some institutes are becoming the focal points for attacks by groups seeking to acquire political power over structures. It is too bad these institutes are regarded as permanent. There is much to be said for temporary project structures, financed for limited periods of time, to do a given task; such temporary project structures are less attractive targets for those seeking rather permanent power bases.

(10) to staff with highly competent people committed to solving problems. I believe that, for the most part, competence and commitment are not definitely associated with such variables as professional reputation, age and retirement or non-retirement. There are both young and old people who are effective both abroad and at home. The young, retirees and people in the prime of life do well and poorly. And it is not always the person with the highest professional reputation who is successful in foreign developmental work. The opposite is not always true either.

(11) to recognize that development research is expensive, especially when done overseas. While any piece of economic development research, teaching or extension

abroad is probably more needed and more valuable than if it were done domestically, it is likely to be three to four times as expensive to execute. It costs about $50,000 a year to keep a U.S. development worker abroad as compared to $20,000 to $30,000 to keep him at home. But this is not the end of the matter. He must get ready to go and, once he arrives, he must settle in. Still further, even if he is abroad for a two-year period, he starts getting ready to go home at about the 18th month. Thus, his productivity is probably no more than half of what it would be if he were to stay at home. This combines with the doubling of the cost of maintaining him abroad as compared with keeping him at home to increase the cost of overseas work three to fourfold.

(12) to recognize that developmental research, consulting, advising and institution building work on the part of universities requires special funding separate from teaching programs.

(13) to recognize that there are greatly increased logistical and accounting problems in connection with overseas work. Presidential, college dean, and department head offices and their existing staffs should not be expected to absorb these burdens for large new projects as part of their ordinary administrative load, unless they are currently underemployed. Still further, inasmuch as the project team is likely to be intercollege and/or interdisciplinary in nature and with an overseas as well as a home base, it is especially desirable that special administrative officers be made available to assist the project leader in a separate administrative unit in a project involving over 5 man-years of work abroad per year. That unit should be under the direct control of the project leader for the duration of the project.

The Role of the Economist in Economic Development

Economists have always had a deep interest in prescriptive knowledge. In addition, they have produced a high proportion of the classical abstract (or theoretical) literature of ethics, particularly (but not confined to) that part dealing with

utilitarianism. Their contribution to abstract non-normative analytical theories have also been substantial. On the normative side, the descriptive work of economists on prices, income, expenditures and utility has been extensive and important as has their descriptive work on the non-normative side. Pigou's welfare economics[8/] was followed by the important analytical work of Hicks[9/] based on Pareto. More recently, Arrow's work[10/] on individual preferences and social choices is a fundamental contribution to abstract prescriptive concepts.

It is necessary to state for the benefit of non-economists and certain forgetful economists thinking about the roles of economists that economics does, in fact, deal with the attainment of non-monetary as well as monetary values. Economics is concerned with non-monetary values and treating non-monetary values as non-economic is a serious error which, among other things, would remove consumption economics from the discipline of economics. It is hard to conceive of a single value about which questions of efficiency do not arise when trying to attain it (if it is a good) or to avoid it (if it is a bad). Still further, it is even harder to think of purely economic or purely social values — the attainment of the so-called economic values is attended by social consequences and conversely, as just noted, there are economic questions of efficiency involved in attaining or avoiding the so called social values. In effect, the economic versus social value dichotomy appears to be a false one.[11/]

8/ Pigou, A.C., Economics of Welfare, 4th edition, MacMillan, 1942.

9/ Hicks, J.R., Value and Capital, Oxford University Press, 1938.

10/ Arrow, Kenneth J., Social Choice and Individual Values, John Wiley and Sons, Inc., New York, 1951.

11/ Johnson, Glenn L., "Obstacles to Growth", Land and Water: Planning for Economic Growth, Eds. Harold L. Amoss and Roma K. McNikle, University of Colorado Press, Boulder, 1962.

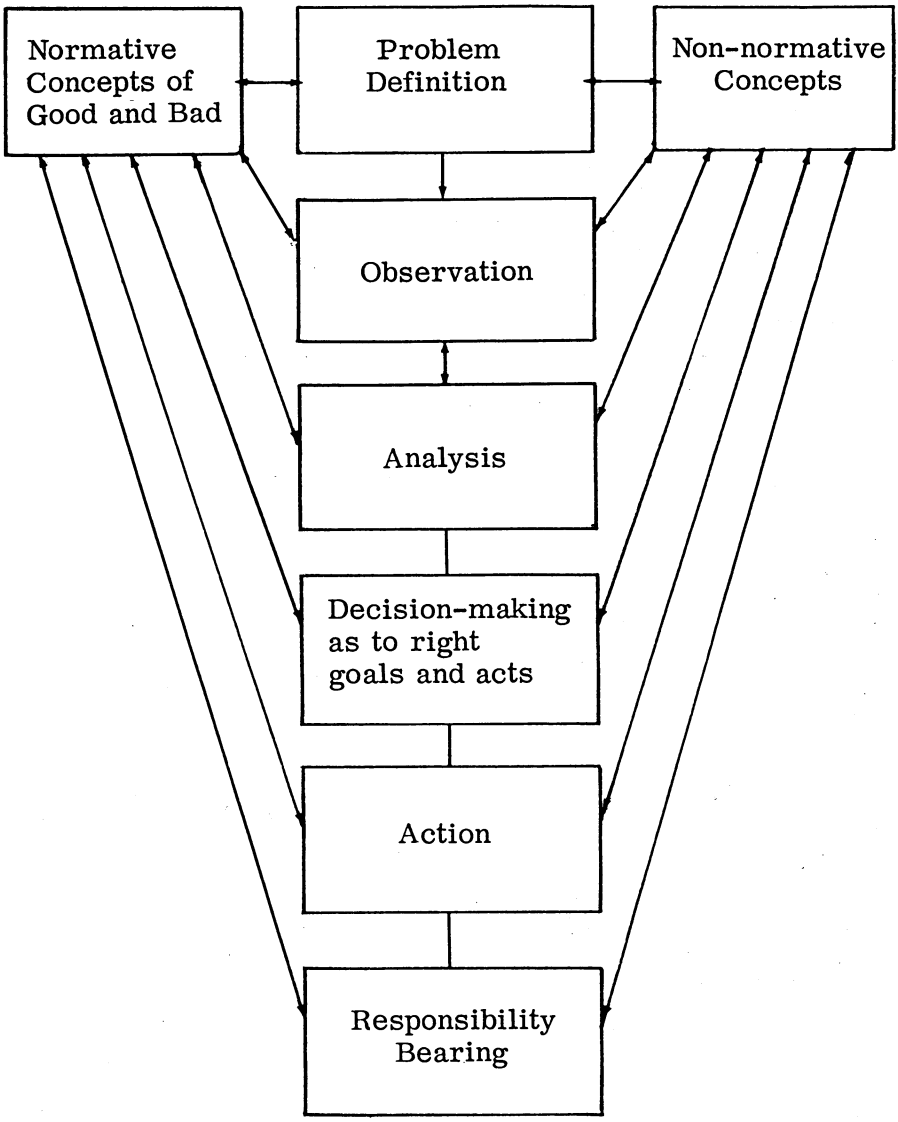
With their relevant abstract and descriptive skills for dealing with the normative and non-normative plus their special prescriptive skills, economists have important roles to play in solving economic development problems. However, economists are in no position to take over the effort. For one thing, many kinds of normative and non-normative information are required most of which are beyond the skills of economists. For another, the prescriptive skills of economists, while highly developed vis-a-vis those of other social sciences, are still woefully inadequate for solving many developmental problems of both the developed and underdeveloped worlds.

Two diagrams are useful in illustrating these deficiencies, one (Figure II) diagramming the problem-solving process and the other (Figure III) presenting the calculus employed by economists to prescribe right actions so simply that its shortcomings are abundantly obvious.

The problem-solving process is diagrammed in Figure II to include six steps all drawing on and/or producing both normative and non-normative knowledge. The development problems of society grow out of changes or the lack of changes in our environment. These changes are mainly with respect to technology, institutions and people. Economists are not as expert in dealing with and in acquiring knowledge about such changes as technical scientists, political scientists, sociologists, psychologists and educationalists. When it comes to decision making, statisticians, political scientists and students of business administration have much to offer. When the solution of a problem requires new plant varieties, it is the plant breeder not the economist who is central. Similarly, agronomists, and chemists and biologists create the new fertilizers, herbicides and pesticides. Chemists, physicists, engineers and designers create the non-agricultural technologies and it is the educationalists who change people and the political scientists who create new political institutions.

Though it is clear that creativity is important in the problem-solving process, it is constrained by repressive social forms and incompetence, including but not limited to mental disorders. Among the repressive social forms are the restraints which different philosophies place on intellectual

Figure II: Diagram of Problem-Solving Process



Source: Adapted from A Study of Managerial Processes of Midwestern Farmers, Johnson, G.L., Halter, A.H., Jensen, H.R., Thomas, D.W., eds., Iowa State University Press, Ames, Iowa, 1961.

activity (see Figure 1, again) and the specilizations of different disciplines including economics. Full creativity in solving economic development requires a very interdisciplinary approach. Also, full creativity cannot be attained with respect to community and national action by persons overly concerned with individual identity. Conversely, a group action-oriented point of view may constrain individual creativity.

Figure III illustrates the calculus commonly used by economists to prescribe right actions — in this case the problem has to do with ascertaining the "right" amount of nitrogen to apply and the "right" yield of corn to attain. The non-normative function relating corn yield to nitrogen applied has been transformed into a gross income or value productivity function by multiplying yield by price (a measure of value). The total cost function is the sum of fixed cost and the product of nitrogen applied and its price (value). Gross income is regarded as good and total cost as bad. The right action is defined as the one which maximizes the difference between good and bad which, in this case, is profits.

This same basic calculus is used in dealing with non-monetary values, i.e. in consumption and welfare economics, bad is subtracted from good and the difference is maximized.

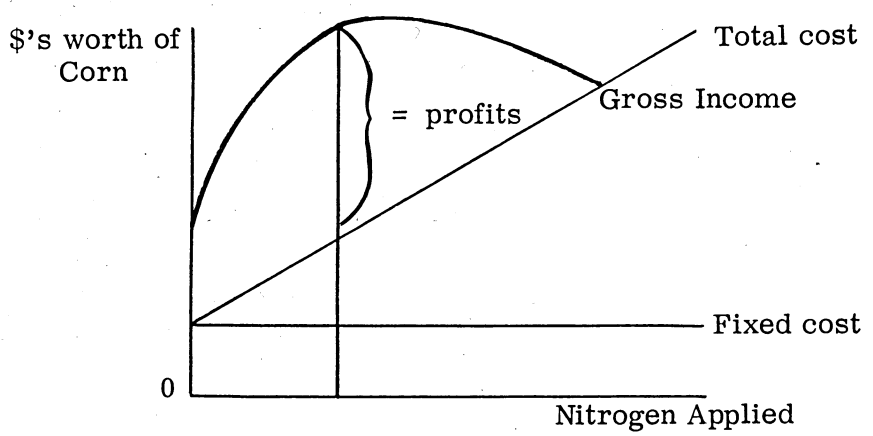


Figure III: Value Productivity and Input Cost Functions for Determining The Most Profitable (right) Amounts of Corn to Produce and Nitrogen to Use.

Figure III is like a very smooth alcoholic drink — it is so easy to use that one does not realize all the complications involved. The smoothness results from simplifying assumptions many, of which are not met for development problems. When these assumptions are not met, the calculus is not applicable, but some economists erroneously apply it anyway. As a generalization, it seems safe to state that a free market mechanism can solve a very high proportion of the development problems to which the calculus applies but that non-market adjustments are required when the economist's calculus is not applicable.

Basically, the calculus assumes the following:

1. a normative common denominator (such as dollars or utility) which permits
   a. the different bads to be added
   b. the different goods to be added
   c. subtraction of the bad from the good

2. that the normative common denominator considered in (1) is either interpersonally valid or is never used to subtract bads imposed on one person from goods conferred on another.

3. that the order in which acts are taken is unimportant. In Figure III it does not matter which of the several units of nitrogen involved is applied first, which second, etc.

4. that the rule for defining the best is simply one of subtracting bad from good and doing that which maximizes the difference.

Many of the problems of economic development just do not meet the requirements for applying the simple calculus of static production, consumption and welfare economics. Oftentimes, for instance, the order in which actions are taken is of crucial importance yet the best order is not obvious. This is especially true when the problem involves the invention and creation of new technologies, institutions and new kinds of people (through education and motivation, for instances). Also we are often at a loss to find the appropriate common denominator when we are (1) trying to subtract the badness of such conditions as lost freedom or racial injustice

from the goodness of income stability or, (2) in terms of a more personal example, subtracting the badnesses of reducing expenditures on health from the goodness of increasing expenditures on education. The example of health versus education may involve one person or several; if it involves several (as in a family, community or nation), the common denominator must have interpersonal validity if the calculus is to be applied. The remaining complication arises when knowledge is imperfect. When outcomes of action are uncertain, the "right" action is not always defined as the one which we think or expect to maximize the difference between good and bad. Instead we might, for instance, want to do that for which the worst which could happen is better than the worst for any other possible action? Or we might want to maximize the expected difference? Or satisfice or flip a coin? Or fight or go to war to settle the question especially if we are having trouble finding an interpersonally valid common denominator?

When problem-solving teams including economists encounter the above four basic difficulties, they often seek solutions by projecting the consequences through time of following alternative courses of action. These consequences have shown who would receive what kinds of benefits and losses (non-monetary as well as monetary). Study of these projections by team members and the relevant decision makers (farmers, congressmen, senators and administrators) have led in many instances to enough resolution of the four basic difficulties discussed for the problems to be solved. Once these difficulties are resolved, the maximizing calculus of the economist can be more fruitfully applied.

More recently, the making of projections has been computerized by members of various disciplines with economists playing an important, if not unique role. The future will involve much greater use of operations research, systems science, etc.[12/]

12/ Halter, A.N., Hayenga, M.L., Manetsch, T.J., "Simulating a Developing Agricultural Economy" and Naylor, Thomas H., "Policy Simulation Experiments with Macro-Economic Models — The State of the Arts", Frontier of Quantitative Economics, Ed. Michael Intrilligator, North Holland Publishing Co., forthcoming.

It is now time to be more specific about the role of economists in helping the university play its roles in economic development.

1. Figures II and III indicate that economists are the sources of only one of the many kinds of information required to solve development problems. This means that economists must be prepared to join interdisciplinary problem-solving teams.

2. Both Figure II and III make it clear that normative as well as non-normative knowledge is required in solving problems. Fortunately, position 6 in Figure I and the four criteria for objectivity on page 29 provide a basis permitting economists and others to do objective descriptive work on normative issues and, hence, to use the economist's abstract normative analytical apparatus and normative descriptive data (on prices, incomes, expenses, utility etc.) to help solve developmental problems.

3. By the nature of their discipline, economists are as well-prepared to work on problems involving the attainment of non-monetary values and the avoidance of non-monetary "bads" as they are to work on monetary costs and returns. Their long-standing contribution to the classical literature of ethics as well as their current contribution attests to their skill, relative to other social scientists, in dealing with non-monetary values.

4. Economists are specially trained in determining right actions to prescribe as solutions to problems. As noted above, the abstract theoretical models which economists have most fully developed often ignore difficulties involving the lack of interpersonal validity of common denominators of values, order, and decision-making rules. However, economists seem to be in a strategic position to work on the abstract aspect of such problems, particularly as they work in close conjunction with decision makers in the real business, political and administrative worlds.

5. Economists, in using micro, competitive and laissez faire models, are often existentialist. At the same time, economists are effective in working at macro levels with groups on group interests and group problems. One of the contributions to be expected from economists is assistance in seeing:

   A. which problems can be left to activities of free individuals making exchanges and agreements with each other in an uncoerced society permitting free choices in an open uncontrolled market; and

   B. which problems must be handled at the macro level with group action involving the imposition of damages on some individuals or groups in order to confer benefits on disadvantaged individuals and groups.