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Higher Education in the Rural Social Sciences*

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Our topic is one of those perennials that are always with us. It poses questions that never get settled because the context in which higher education is carried on is constantly shifting and because the rural social sciences are continously evolving. All anyone can do in opening the discussion is to review some of the important questions that are involved and state some personal preferences as a means of stimulating debate.

Let us begin with a couple of definitions.

When we speak of "higher education" I assume that we mean formal schooling beyond high school graduation. Learning needs to be a life-long activity, but we are confining our attention here to those aspects of it that most need to be emphasized at the age of university students -- the late teens and the twenties -- and that are most appropriate for treatment in the atmosphere and routines of formal study in the company of professors and other students. Thus, what we mean by higher education is in-school education for persons in their late teens and twenties who have previously completed high school.

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But how about "the rural social sciences"? The second term in our topic is not "agricultural economics" and I assume that the phrase "the rural social sciences" was deliberately chosen. Clearly agricultural economics and rural sociology are included, even at a time when many in these professions are questioning whether the adjectives attached to economics and sociology are pertinent or necessary. How about anthropology? Most of the studies of anthropologists have been conducted in rural cultures and their insights are extremely relevant to many modern as well as older rural problems; they are relevant today in the United States as well as in primitive cultures. How about social psychology and political science? They deal with other broad ranges of phenomena that are important in dealing with rural problems.

As a matter of fact, it may be easier to draw a line between the humanities and the social sciences than to deal with the question of what, within the social sciences, is distinctively rural. Each social science has a set of analytical tools that are "scientific" and to one degree or another it tries to reach generalizations that allow an element of prediction. Moreover, interactions among persons within patterns of organization are the ground of their investigations. By contrast, the humanities are more interested in persons and in individuality, even though they also may explore the social settings within which the individual's behavior may be better understood.

I shall take it in the remainder of this paper, therefore, that our concern is with the social sciences that are primarily concerned about patterns of human behavior and social interaction, sometimes explicitly but not always in exclusively rural settings.

Another term -- not mentioned in our topic -- is necessary to our discussion. That term is "social problems." Each discipline concentrates on selected aspects of reality in order to increase understanding of the aspects it studies. Moreover, the real world problems we all face cannot be classified in a manner consistent with the divisions among the social sciences. They cut across those boundaries and our understanding of any single problem is distorted when viewed solely from the perspective of any one social science. One of the most fundamental issues with respect to higher education in the rural social sciences arises precisely at this point: to what extent should it introduce students to the domains of selected academic disciplines, and to what extent should its objective be to enable students to grapple effectively with the social problems of the real world.

Ours is not a new topic. Anyone who has been following our Journal knows that every year several articles appear that discuss one or another aspect of it. Six years ago a Symposium for Teachers of Agricultural Economics was held at Virginia Polytechnic Institute and the papers were published in a special number of the Journal. Two speakers at that symposium suggested objectives for undergraduate education in agricultural economics that bear repeating here. Acker [1] proposed four objectives:

"(1) To give students mobility;

"(2) To increase a student's learning power;

"(3) To give a subject dimension and perspective;

"(4) To maintain the freshman level of enthusiasm."

I find this a useful formulation. From the standpoint of relative importance I would move the first objective to fourth place, although it remains important. The first objective, it seems to me, should be to foster in students a habit of continuous learning, so that they can apply more and more rigorous analysis, and an ever broadening fund of knowledge, to emerging problems -- whether within their professions or in their public and private lives. Since that objective is usually pursued through studies that are colored by the points of view of different disciplines, giving each subject "dimension and perspective" is important. Certainly the maintenance and hopefully the intensification of enthusiasm needs to characterize the whole process. And the total program needs to be developed with each student's probable need for future vocational and place mobility clearly in mind.

If this list of objectives seems rather general it may, by that very token, be a good place for us to begin. That is because the role of the rural social sciences in higher education needs to be separately discussed with respect to four different groups of students. There are, first, that considerable number of undergraduate students who will not choose to major in one of the social sciences but who nevertheless need at least an introduction to their insights. There are, second, those students who do major in one or another of the social sciences but for whom the B.S. degree is terminal. In addition, it is necessary to consider the case of students who proceed beyond the B.S. degree to major at the graduate level in a social science. Finally, there are students who proceed to graduate work majoring outside the social sciences but who

need to develop a groundwork for interdisciplinary collaboration with social scientists, just as social scientists need a preparation that will enable them to collaborate with research workers in other fields.

Obviously, one cannot go very deep, in the time at our disposal, into the problem with respect to the needs of any one of these four groups of students, let alone all of them. But unless we do make the distinction among the four groups we are likely to speak at cross-purposes in the discussion to follow.

Let us begin, then, with the case of the undergraduate student who may or may not plan later to specialize in one of the social sciences. What should all students get of the social sciences, regardless of the direction in which they may specialize? I assume we would all agree with James, [3] who said in the same VPI symposium: "Any student graduating from a good university should have a broad university education regardless of his major." And I would assume that the purpose of a broad university education is to help students progress into mature adulthood and citizenship aided by what human experience to date has to offer.

To say "what human experience <u>to</u> <u>date</u> has to offer" suggests an orientation to the past. Surely, however, a good university education should be oriented primarily to that future during which students will live out their lives. Part of that preparation for the future is to place a much greater emphasis on developing problem-solving ability than on passing on accummulated knowledge. But only part, for the human race has learned quite a lot that is still useful. The problem is to present and discuss what has been learned in the past that is still useful in a manner such

that its relevance to the future is apparent, and to do that with as much economy of time and effort as possible. In that review of human experience it is important to range more widely than just western culture. Classicism in education has long emphasized what can be learned from the distant past that is of current value. Today we can and should draw on the additional resources of the more nearly contemporary experiences of people in all parts of the world.

The social sciences have much to contribute to this general education for the future, but I have come to doubt that in courses for all students at the undergraduate level their contribution can best be made through courses organized by separate social science disciplines. Instead, it seems to me that it would be better to develop a curriculum of integrated social science courses in each of which the insights of various social sciences and, at appropriate points, insights from the humanities and from the physical and biological sciences as well are considered together. The organizing foci of these courses might be (1) a selected set of concepts, (2) a set of processes of human interaction that have been identified and studied in the past and that are likely to persist, and (3) a set of major social problems, some of which are new but some of which, old as the hills, are still troublesome.

While the organization of such courses could be accomplished in various ways, it would seem to me that the set of social problems might well be the major basis for organization, with the discussion of relevant concepts and processes brought into the discussion at appropriate points. However, since it is increasing understanding of concepts and processes that is most important from the standpoint of helping students improve

their capacity to think and to continue learning, the three sets are discussed in reverse order in this paper.

As illustrations only, let me indicate some of the kinds of content that might go into such a set of courses.

CONCEPTS. With respect to concepts -- the ideas or generalities in terms of which thinking is carried on -- I would place that of systems high on the list. The farm business and the neighborhood are basic rural examples. The agricultural system, of which commercial and noncommercial agri-support services and the whole agri-milieu of policies and institutions within which agriculture must be carried on are component parts, is extremely important although not wholly rural. The social system ought to be treated as another example, as should the concept of culture. The national economic system, on a more restricted scale the system of financial institutions, and local and national political systems are still other important examples of systems to be discussed. In all of these discussions of systems considerable attention should be paid to the concept of "feedback," of the continuous modification of related systems by each change in any one of them, whether economic, social, political, or technological. Almost more than anything else, students need to learn that component parts of systems cannot be changed without widespread repercussions.

A second organizing concept on which I would suggest placing major emphasis is that of the optimum. It is here that a central, if not the central concern of much of economics can be introduced, and where the closely related problems of seeking a balance between the needs of the individual and of society, between the functions of local and national

government, and even between bilateral and multilateral negotiations of international affairs can be explored. Too frequently these paired considerations are seen as conflicting absolutes rather than as coordinate necessities between or among which optimum solutions must be sought.

A third concept to which I would give high priority is the probabilistic nature of much of our knowledge. It is particularly important throughout the social sciences in view of the intimate interaction of multiple causative factors, and particularly because of the personal differences among human beings. Our knowledge about human behavior and interactions is fundamentally different from our knowledge about the inanimate world and recognition of that difference is basic to mature decision-making in the economic, social and political spheres. The concept of statistically probabilistic knowledge, like those of systems and the optimum, can be illustrated from many fields.

This list of organizing concepts could be expanded considerably. To take a few examples from economics that have parallels in other social science fields, it might include a consideration of the multiform application of the concept of externalities, the concepts of diminishing returns and diminishing utility, economies and diseconomies of scale, and the important but diminishing applicability of the concept of "free goods."

PROCESSES. As for the set of processes to be discussed, various types of social change should certainly be one. These include, but are not limited to, increasing urbanization, organizational bureaucratization, the emergence and decline of various kinds of elite groups, the integration of diverse ethnic or cultural subcultures, socialization of the young, and the economic and political concomitants of these and similar changes.

Another important process is that of group decision-making. Prominent examples for exploration are group decision-making through the market and price mechanisms, through legislative planning, through legal regulations, through patterns of corporate management, and through the crystalization and modification of cultural norms, values, customs and mores. Widely different in form and method, customarily discussed separately within individual social science disciplines, all of these methods of social decision-making have much in common. And when relevant techniques for social action are being sought, these are among the mechanisms that are available for employment.

Innovation is another process of great importance. Technological innovations are usually modified only slightly during the process of dissemination and adoption. But is the same true of social and political innovations? Or are these usually altered quite drastically during the process of adoption so that what finally comes to prevail is quite different from the innovative idea or proposal that launched the process?

These are only four examples of the many processes of human interaction that the social sciences explore and that all students need to understand, certainly as citizens whether within their vocations or not.

SOCIAL PROBLEMS. The third set of foci for organizing integrated social science courses might consist of selected major social problems. One of these is the interacting problem of population growth, resources, and technology. The whole present day ecological concern is part of this as is the concern about economic growth and the meaning of development. Insights with respect to it run all through the social sciences, and knowledge from the physical and biological sciences must be brought in, too.

A second current problem of high priority is that of income distribution in both developed and developing societies. Part of this problem is economic, insofar as income is related to work for which payment is made. Part of it is political insofar as transfer payments and public services are involved. Some of the repercussions of whatever is done are economic; some are social; some are political.

A third current problem that could well serve as a focus for study is that of economic and social discrimination. What do we know about it? What are its apparent causes? What are its repercussions? What can be done about it?

A fourth could be the problem of the relationship between messages and truth. Not much attention is paid nowadays to Plato's parable of The Cave but it is still as pertinent and revealing as it was when he conceived it. Our present situation is even more precarious. Added to the partialities of our messages that flow from inherent human limitations of understanding and faulty transmission mechanisms there are added the distortions unconsciously and even intentionally introduced into advertising, some governmental reports, and some academic teaching through conscious selection of materials to be emphasized, criticized or avoided, even as in this paper. We live by messages when what we need is the truth; and the truth is everlastingly evasive.

The fifth basic problem to which the social sciences can make a major contribution and that could serve as a primary focus of study is the perennial interaction and conflict between individual freedom, on the one hand, and social cohesion and order, on the other. Johnson [4] in his

paper last year on "The Quest for Relevance in Agricultural Economics," reminded us that "the history of human societies is one of balancing the interest of groups against those of individuals. And current problems and issues are no exception."

Even when one is concerned solely about cohesion and order within society, human freedom is still important. Consider the term "deviant." It has come to have an almost pejorative meaning as the person or event that does not conform to a generality or generalization (and generalizations are at the heart of the social sciences). Yet, as my colleague, A. M. Weisblat, is continuously reminding us, it is the deviant person or event that may be the most significant from the standpoint of social, economic and political change. That is where innovations and innovators are to be found. Consequently, it frequently is the individual cases at the thin ends of a statistical distribution that should receive our major attention, rather than the strength of central tendency.

Other important current problems will suggest themselves to you that could serve as integrating foci in undergraduate teaching of the social sciences, but the one I wish to make my final suggestion -- even though to do so means enlisting the participation of the humanities as well as the social sciences -- is the problem of human tragedy: tragedy not in the colloquical sense of catastrophic accident or physical disaster but in the classical sense of having to betray one deeply cherished value in the process of being true to another. It is a much bigger problem than the economic concepts of trade-offs and opportunity costs although those are minor forms of it and certainly should be introduced and discussed. They are not really so minor when one considers the human consequences of actions foregone in

order to undertake others. Tragedy has its social counterparts where actions taken in pursuit of social cohesion place crippling burdens on the freedoms of individuals. Its most poignant expression, however, is in the personal tragedies in which to do the right thing with respect to one loved person or group inevitably means to do the wrong thing with respect to another. We do this all of the time. We have to do it, not because of some inner and devilish compulsion or because we make the wrong choice, but because the basic nature of human life and society is such that we cannot avoid it.

What I have been suggesting is that one of the important tasks of the social sciences at the undergraduate level of higher education is to participate in the education of all students in the direction of developing into mature persons and citizens. That education needs to be future oriented in the sense that it brings the past fruits and present analytical methods of the social sciences to bear on processes and problems that are critically important today. Students are quite right when they demand more relevance in their courses. They are right when they object to undergraduate courses that seem more oriented to building up the interests and empires of particular disciplines than to throwing useful light on current problems.

Meanwhile, we as teachers and as representatives of a social science discipline need some reorientation also. Even those who favor trying to move toward a more problem-solving and multi-disciplinary approach in teaching recognize that a major difficulty is that each discipline, to use Mellor's [6] words "has a good deal of logic of its own. Disciplines are essentially organized around relatively fully integrated bodies of theory and research methodology.....If one teaches within the discipline ....

there are certain economies of operation. This is not to argue .... that this is good for (undergraduate) teaching, but simply to indicate that there are powerful rational forces pressing in this direction." There are indeed! For one thing, it is embarrassing to admit how limited a contribution many of our tools and insights can make to the solution of practical human problems. Is it not part of the problem that we have assumed a sophistication and a near-finality of our knowledge that it does not in fact possess? It is not easy to admit -- what I believe to be the fact -- that we are living in some intermediate stage of what is still a relatively primitive culture. We are nowhere near understanding ourselves, society, and the world. Perhaps we never shall be. But is it not better to admit our situation? Would this not contribute to meeting one of Acker's objectives, namely, to maintain and hopefully to increase students' enthusiasm? Might not students, through some such curriculum as I have suggested, come to see that the social sciences do have a considerable number of useful insights about highly relevant current problems? They would also discover how partial our answers are and how much remains for them to do. After all, what stimulates good students is not the beauty of ready-made answers but the enthusiasm of good teachers in the presence of the unknown.

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Moving now to the second role of the social sciences at the undergraduate level, we turn to the group of students who choose to specialize in one of the social sciences. There are two subsets within this group, each with somewhat different needs. One subset includes those students who expect that the B.S. degree will be terminal for them, and who immediately after graduation plan to seek employment related to agriculture or

rural life. The other subset consists of those who plan to go on to graduate school. What is to be avoided is designing a common undergraduate curriculum for both subsets, with the preparatory needs of graduate students primarily in mind. Even today only a minority of undergraduates go on to graduate school. The needs of that minority should not dominate the nature of the courses available to the majority for whom the B.S. degree is terminal.

It was with respect to those students who plan to seek employment immediately after receiving the B.S. degree that James [3], again in the VPI symposium six years ago, proposed three objectives:

> "(1) To teach the student to think for himself, taking a logical approach to problem-solving and decision-making.
>
> "(2) To achieve a minimum level of attainment in specific areas of knowledge.
>
> "(3) To give each student enough applied training so that he is able to secure a job and be successful in his first employment."

It is because the "specific areas of knowledge" different ones of such students will need vary so widely that their needs can only be met by programs of study in which they may choose among many elective courses. For the most part, what they need is a considerable variety of applied courses to give them both broad understanding and reasonable job mobility in the future, combined with a greater concentration on additional applied courses particularly germane to the specific type of job the student would prefer and hopes he can find. It is doubtful that he should be required to take detailed courses concentrating on general theory. Let him take them or not as he feels inclined. And it is important to bear in mind that the

emphasis needs to be on the student's probable first post-graduation position, leaving much needed learning to be acquired by each person later, on his own.

The undergraduate needs of those students who plan to proceed direct to graduate school to specialize in one of the social sciences are somewhat different. Such students, also, need a rather broad spectrum of applied courses but for a different reason. It is not because they plan to seek employment as farm managers, credit officers, marketing officials, or enter any other immediate post-B.S. employment. It is, instead, to give them insight and perspective into the various specific types of problems to which the theory and tools of analysis on which they will largely concentrate as graduate students need to be pertinent and applicable. Along with that wide variety of applied courses such students need a set of solid courses on disciplinary theory, mathematics and statistics to prepare them specifically for graduate school. Many of the concepts treated more exhaustively in these theory courses would be the same as those introduced in the integrated social science courses for all students, but here they would be more fully developed within the context of a particular discipline.

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To recapitulate, it seems to me that all undergraduate students interested in careers related in one way or another to agriculture or rural life need from the social sciences an increasing awareness and command of selected insights of those disciplines, the relevance of those insights to contemporary human problems, and an awareness of the interrelationships among the insights of the various social sciences and between them and the fruits of other branches of human knowledge.

In addition to that, students who assume that the B.S. degree will be terminal for them, and who major in a social science at the undergraduate level, need a broad spectrum of applied social science courses plus some concentration on courses related to the particular type of employment they intend to seek. In any case, their preparation for employment can only be for the immediate future; professional needs will change rapidly and only life-long learning can keep up with them.

Those students who plan to go on to graduate school to major in a social science need a similar broad spectrum of applied social science courses as undergraduates as well as selected general courses in other fields of study. In addition they need solid courses in basic theory, mathematics and statistics to prepare them for the more specialized and largely discipline-oriented studies in graduate school.

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One cardinal point to be kept in mind in considering what should be emphasized in graduate curricula (and from here on I shall confine my comments to agricultural economics) is that although the Ph.D. degree is the end of the line for in-school student experience it is not the final process in the making of a highly productive social scientist. To realize that, one has only to ask oneself how much of the mature competence of a Brandow, Hathaway, Heady, Johnson, Krishna, Ruttan or Schultz (to name only a few examples and in alphabetical order) is due to the nature of their formal graduate study. Much, but by no means all. Graduate study is itself an intermediate stage, usually traversed between the ages of 22 and 30. Much of the formation of a good agricultural economist comes during the years of junior apprenticeship, peer interaction, and cumulative experience after the Ph.D. is far behind.

With that in mind, there is general agreement that the major emphasis within the years of formal graduate study should be on theory and on developing skill in the use of analytical techniques. Taking that as given we are left with at least three important problems. One is the scope of agricultural economics. The second is the degree of adequacy of current theory. The third is the question of the degree to which the analytical techniques of agricultural economics taught in graduate school are to be econometric.

Important as these questions are, they do not get settled. Individual answers are innumerable. At certain times, interspersed among period of hot debate, there seems to be a strong majority opinion within the profession with respect to each of them, but there are always vociferous minority reports, to many of which more attention should be paid than is often the case, as witness the recent low esteem of institutional economics. Nor does there seem to me to be a secular trend in the answers in any particular direction except perhaps with respect to the relative importance of econometrics, and for it the trend is too recent to conclude that it is permanent. What we can conclude is that each of these questions is well worth continuous debate, and I would argue that a strong thread running through graduate programs of study ought to be the recognition that each of these questions is perennial for good reasons. How else can we avoid creating conditioned myopia that what is most recent is best, and perhaps even ultimate?

Definitions of the scope of agricultural economics take many forms. One good one, from my point of view, is that implicit in Bogor's [2]

objectives of agricultural economics, quoted by James at VPI:

> "(a) To understand and describe the environment in which farm products are produced, distributed and consumed, including agriculture's social and political institutions, its physical and human resources and the relevant value preferences of its people;
>
> "(b) To refine and extend the principles of economics as they apply in the production, distribution and consumption of farm products;
>
> "(c) To analyze opportunities for fuller attainment of public and private objectives through changes in the use of scarce resources available for production, distribution and consumption of farm products."

The problem, however, is not primarily the multiplicity of formal definitions. Instead, the problem is the de facto definitions that are implicit within any program of graduate studies in the relative emphasis given to various aspects of what is admittedly a field that is difficult to define. These implicit definitions grow partly out of the many specializations to which individual faculty members devote themselves, each still, and usualiy legitimately, calling himself an agricultural economist. They grow partly out of shifting professional enthusiasms and fashions to concentrate now on this and next on that particular problem or analytical technique within the broad field. They grow partly out of the finiteness of our spans of attention and out of different prevailing forms of thought at any one time. In the past these facets of specialization and tendencies to concentration have been considered highly productive. They still are,

but we also now recognize how broad many of the systems are with which our analyses are concerned and the corollary of that is the partialities and distortions inherent in any narrow specialization.

Perhaps a better formulation of this problem would be, not how is the field of agricultural economics to be defined, but to what extent should students be encouraged to concentrate exclusively on agricultural economics during their graduate program. One gets the impression that the curricular demands, particularly in the fields of statistics and quantitative analysis, have become so great that no matter how much intellectual assent may be given to the virtues of some attention to other disciplines there simply is no time for students to work noneconomic courses into their programs. My own view is that those universities are on the right track that allow considerable latitude for programs of study to be tailored to the particular interests of individual students, including encouraging many students to take some courses in other fields. These tend to be those universities or departments that are pretty confident of their own position among universities or departments; they are not apprehensive that the later performance, or lack of it, by any of their students is going to jeopardize their standing. By contrast, those departments tend to be most rigid in their disciplinary requirements that are consciously trying hard to become No. 1, but secretly doubt that they have arrived.

But even that latitude is not enough. The need for students to have opportunities to explore specific problems together with students specializing in other disciplines -- social, physical and biological -- is not limited to the undergraduate years. I concur with those including

Johnson [4], Sewell [9] and White [10] who contend that multidisciplinary exploration of selected problems should be part of the required program of every graduate student in a social science.

The second open question is that of the adequacy of present theory. It seems to me that there is much more widespread acknowledgment of this problem today than there was a decade ago. Growth theory is perhaps the most obvious field in which it is recognized, along with more limited aspects of it such as capital theory which Schultz has been examining so assiduously. Even the theory of the firm is being challenged more and more along the lines suggested by Johnson [5].

Two separate types of exploration seem to me to be fruitful with respect to this problem.

One is the thesis pursued by Mitchell [7] forty years ago: the recognition that the new theory developed at any particular time is a response to the burning public issues of the day. That fact he demonstrated from the work of Adam Smith through that of Bentham, Malthus, Ricardo and Mill, and the same correspondence is to be seen in the much later work of Keynes and present day concern about economic growth. Once developed, theories tend to persist on their own momentum assisted by academic habit. When distinctively new issues come to the fore, previous theories may not correspond to them.

The other approach to this problem is to recognize that, perhaps especially in agricultural economics, a considerable amount of very old theory is still quite relevant today. Diminishing returns to land are still very real over much of the earth's surfaces. What is perhaps most important with respect to theory, in addition to giving it the large part in graduate programs that it deserves, is to try to assure that its ad hoc character

is thoroughly understood, so that each portion of it is used where it is relevant and not where it is not.

The third big question has to do with the degree to which agricultural economics becomes synonymous with econometrics plus mathematical economics. What is at issue here is not the effort to press for and increase the precision of quantitative measurement wherever that is possible, or the utility of employing mathematical logic whenever it can appropriately be used. Instead, the question is whether all problems that do not lend themselves to such treatment are to be pushed out of the domain of respectable economics. I doubt that any of us would contend that there is not a tendency in that direction today.

This tendency is of debatable value. In a report of a recent conference on computer technology [8] one finds this passage: "Several participants .... observed that while the computer might have forced .... older scholars to construe their problems in new ways, the impact on younger persons who had grown up with the computer had been different. 'Some of these younger fellows know Fortran .... better than English'" said one of the participants. And because econometrics, mathematical economics, and computer facilities are available, much work utilizing them today is based on assumptions and estimates of variables that make their results of dubious utility and frequently misleading. The most competent mature scholars know this and make allowances for it, but do most of their students?

If this tendency to limit agricultural economics, in effect, to studies that can legitimately be treated econometrically continues to run its course, what then? We already are confronted by a situation in which

the domains of the different disciplines are not mutually exclusive nor do they, among them, cover the whole spectrum of human, social, and economic phenomena needing attention. Many important areas needing study now fall between the slats of established disciplines. Many problems to which the most pertinent concepts and principles are economic (in the older sense) cannot yet be tackled quantitatively. If we now push out of economics all that cannot currently be analyzed mathematically, and at the same time that many scientists in other social science disciplines are trying to do likewise, who will pay attention to the variables and the multiform feedbacks that cannot be handled in that manner?

How can a department of agricultural economics move toward dealing with these perennial problems constructively? Let me conclude by bringing together six suggestions, none of them new and none of them originating with me:

(1) Assemble a staff of persons with varying viewpoints with respect to all three of these questions.

(2) Pick smart students.

(3) Since so much of graduate learning consists of what students learn from each other, give <u>all</u> of them desks in rooms accommodating three to six students each.

(4) Establish a program of frequent staff-student seminars in which students can hear faculty members debating their differences and in which students can participate as peers.

(5) Adopt a set of regulations that allows students to undertake different programs of courses tailored to their special interests, with the option to include selected individual courses from other departments.

(6) Let some of the research and/or seminar experience of each graduate student be in "multidisciplinary, problem-solving study and efforts." [4]

Such a combination of procedures will not result in answers to those basic questions to which answers are not possible, but it can keep the questions alive and open, and contribute to professional growth within them.

In closing, allow me to confess to a pervasive personal bias. It is that most current graduate programs are, to far too great an extent, programs of training, rather than of education. That they should be predominantly programs of training I have somewhat reluctantly come to accept. But they go too far. Instead of turning out broadly competent persons well equipped with certain analytical tools, they tend to turn out analytical machines, with sensitive perceptors finely tuned to interpret nearly all aspects of human affairs solely in terms of the concepts and variables of a particular discipline. By insisting on such an exclusive concentration on developing tool-using competence, whether those tools are mathematical or not, the result is a high degree of sophistication within a very narrow range of understanding, coupled with the vestigial remains of a much more elementary exposure to other fields of knowledge and analysis at a much younger age. For a long time it puzzled me that one of my professors whom I regarded most highly, Frank Knight, with his keen perception of so many problems, was so scathingly sarcastic and seemingly naive with respect to anything religious. Finally I learned that as the son of a small-town minister he was so repelled by Sunday School at an early age that he never delved into Christianity with understanding again during all of the

years he was becoming so extensively knowledgable in other fields. I submit that no matter what the fare may be at the high school and undergraduate levels, if we insist on the graduate student years being devoted exclusively to narrowly specialized training it will, in general, effectively outrun and smother a healthy understanding of and respect for other fields of knowledge. Any many of those other fields of knowledge are of high importance with respect to many of each scholar's own objects of study. They probably are even more important to his emergence as a mature human being and constructive citizen.

Many of our most outstanding colleagues have overcome that handicap later on, but they have done it, I am convinced, in spite of the system of graduate study rather than because of it.

Is this inevitable, or might it be changed?

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