DOCUMENT RESUME

ED 137 168 SO 009 882

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TITLE A Geographer's Perspective of Contemporary Problems and Human Survival: An Introductory Course in Human Geography and Motorcycle Maintenance.
PUB DATE Nov 76
NOTE 15p.; Paper presented at the annual meeting of the National Council for Geographic Education (San Francisco, California, November 24-27, 1976)

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS Conflict Resolution; Course Descriptions; Course Objectives; Curriculum Development; *Geography Instruction; *Global Approach; Higher Education; *Human Geography; *Interdisciplinary Approach; Living Standards; Problem Solving; Skill Development; Social Environment; *Social Problems; Social Sciences; *Values; World Problems

ABSTRACT

The scientific community needs to reappraise its actions and become concerned with the real world problems that threaten existence in society. These include world poverty, starvation, and declining quality of life. Geographers need to develop greater concern resulting in evaluating their research, curricula, educational goals and course content in light of the problems of human survival. Three tasks to be undertaken in equipping students for such problem solving are identified. First, geographers must learn more about research in other social and physical sciences in order to work towards solving societal problems in an efficient, interdisciplinary manner. Second, geographers must develop curricula which emphasize training for present and future problem solving. Third, geographers should reorient geography courses to focus on the complexity of contemporary problems. An introductory, college-level, human geography course outline is presented in five parts: (1) focuses on mankind at the turning point in his struggle for existence and explores the urgency of finding solutions before it is too late; (2) discusses geographic perspective, reasoning, tools for analysis, and relevance; (3) identifies and discusses local, national, and international spatial systems; (4) describes the processes which underlie human survival and spatial systems; and (5) summarizes the geographer's contribution to future survival. (Author/DB)

Special Session Program: Reflecting the Changing Nature of the Discipline in the Teaching of Human Geography--New Instructional Strategies and Curricular Frameworks
National Council for Geographic Education
National Conference, San Francisco, Calif.
November 24-27, 1976

A GEOGRAPHER'S PERSPECTIVE OF CONTEMPORARY PROBLEMS AND HUMAN SURVIVAL: AN INTRODUCTORY COURSE IN HUMAN GEOGRAPHY AND MOTORCYCLE MAINTENANCE

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"If wisdom is in reality an action policy for 'doing' or 'letting be,' ... it can be seen that we are really concerned with competence or know-how at the societal level...The total amount of knowledge...has increased exponentially, and it appears that the relative competence (of society) to manage the world may actually have decreased...An attempt must be made to develop a science of survival."
(Potter, *Bioethics--Bridge to the Future*, 1971)

"What is best?...There are eras of human history in which the channels of thought have been too deeply cut and no change was possible, and nothing new ever happened, and 'best' was a matter of dogma, but that is not the situation now. Now the stream of our common consciousness seems to be obliterating its own banks, losing its central direction and purpose, flooding the lowlands, disconnecting and isolating the highlands and to no particular purpose other than the wasteful fulfillment of its own internal momentum. Some channel deepening seems called for."
(Pirsig, *Zen and the Art of Motorcycle Maintenance--An Inquiry Into Values*, 1974)

"And it occurred to me there is no manual that deals with the real business of motorcycle maintenance, the most important aspect of all. Caring about what you are doing is considered either unimportant or taken for granted...I think we should...explore it a little to see if in that strange separation of what man is from what man does we may have some clues as to what the hell has gone wrong with this twentieth century."
(Pirsig, *Ibid.*)

The author of the first quotation is of the belief that the ability of society to solve problems and to develop survival policies is actually declining relative to the amount of factual data being accumulated.[1] He notes that we are failing to fully comprehend the controlling factors of our world system and that we are unable to agree on what the "survival parameters" are. To help overcome these deficiencies, Potter calls for the creation of a Council on the Future.[2] This group would be responsible for publishing a new international communication media entitled The Journal for Mankind, which would specifically address the problems and policy alternatives confronting our contemporary world society. In essence, the overall objective would be to develop a science for human survival.

In his most fascinating book on Zen and motorcycle maintenance, Pirsig echoes a similar plea for survival research.[3] In particular, he calls for channel deepening--a task that requires certainty of values and direction of purpose. No one, he says, is really caring for the real business of motorcycle maintenance--his analogy to the lack of attention to the problems of society and to the real challenges of human survival.

Notwithstanding these pleas for survival maintenance, it appears as though our society today is becoming more and more indifferent to such prophecies of gloom and doom. I recall, for example, the first time I read William and Paul Paddock's book on Famine 1975! America's Decision: Who Will Survive?[4] I was quite taken by the work and was convinced that the end was upon us all. Then, all of a sudden, the year 1975 came and went and I realized that the prediction had not come true.

Then I read Limits to Growth[5] and its sequel, Mankind at the Turning Point.[6] Although I was again tempted to become alarmed, somehow I found myself wanting to believe that these works were further evidence of panic, over-generalization, and false hypothesizing. Instead of rejecting these prophecies, however, I am becoming more and more concerned about the current world anxieties and about our seemingly inability to resolve societal conflicts. The real question, it seems to me, is how long can we continue to disregard the increasing number of world problems and prophecies of gloom. The pile of world problems seems to be getting higher and higher--world poverty, starvation, and inadequate food distribution; overcrowding, crime, and declining quality of life; deteriorating neighborhoods and urban and regional decline; inability to develop adequate and just management of our resources; mistrust and disintegration of our political institutions; our hunger for military power and more arms; and our insensitivity to the needs of others in different age groups, in different communities, and in different cultures. Conditions in Latin America, for example, are becoming so critical that religious leaders there have this month written an open letter to religious leaders in North America asking them to have greater sensitivity to the problems of humans south of our border.[7]

When will we in the scientific community begin to reappraise what we are doing and when will we begin to be concerned with the real problems of society? Or, to follow Pirsig's query, when will we begin to realize that sooner or later our motorcycle is going to require maintenance and when will we begin to learn how it functions so that we can head off severe break-down?

Such criticisms of the scientific community are not new. In 1939, for instance, Robert Lynd wrote a book entitled Knowledge for What? in which he criticized disciplines that are solely concerned with shaping their "bricks" of data and throwing them, without mortar, onto a growing heap of other bricks.[8] These disciplines, he says, have no concern for developing a social science corpus on which a floundering world can survive.

As geographers we must begin to evaluate our research, our curricula, our educational goals, and our course contents in light of Lynd's comments. Are we guilty in our research, for example, of developing bricks and causally throwing them onto a heap of other bricks? Are we guilty of filling our courses and our curricula with unstructured facts? Are we guilty of failing to develop the theoretical and conceptual insights that are necessary to provide the mortar that will enable our students and our colleagues to build a bridge toward solving contemporary problems and creating effective policies? Are we really providing our students with the skills and the training they will need to cope with the future? I suspect that in too many instances the answers geographers must give to these questions are no, we are not adequately preparing ourselves nor our students to meet the present and future challenges of human survival.

How can we as members of the geography discipline develop greater concern for "motorcycle" maintenance? I believe that we can and indeed we must undertake three specific tasks if we are to better equip our discipline, ourselves, and our students for present and future problem-solving. First, we must become more knowledgable

of the research achievements and failures of our colleagues in other parts of the scientific community. In other words, we must become more familiar with the work that is going on in other social sciences and in the physical science fields. We must develop an appreciation for what von Bertalanffy calls the "isomorphism of science;" that is, the commonality of principles and behavior that are fundamental to all system analysis.[9] In essence, we must strive to break down interdisciplinary boundaries and to create a unity of science dedicated to sharing achievements and failures, and committed to solving societal problems in a cooperative manner. For too long disciplines have gone their own way, jealously guarding their so-called domains and unaware and often uncaring of what is going on around them in other disciplines. This method of operation is inefficient and it often distracts us from addressing the crucial problems of society. As Pirsig has noted, we need to deepen our channels--we must focus our attention on the real problems of society and we must work together to find better and just solutions.

The achievement of this first task will not be easy. We will have to broaden our awareness of the techniques and principles used in other disciplines. For many of us, this will require that we spend a great amount of our time in postdoctorate retraining programs and in reading the journals outside our own discipline. In addition, we will have to take the initiative and develop interdisciplinary research projects and grant proposals. We will have to work closely with university administrators to create academic programs that are more interdisciplinary in nature. And we will

have to reformulate our notions of the function and purpose of the university in the community and in the world.

Second, we must develop curricula that emphasize training for present and future problem-solving. As Toffler has said in his book on Future Shock, our curricula are usually unrelated to a well thought-out conception of contemporary needs. Moreover, he adds, nothing should be included in a curriculum, a textbook, or a course, unless it can be strongly justified in terms of future problems-solving.[10]

It is my belief that we must provide our students with those training programs that emphasize not only quantitative techniques, but also those skills that are necessary for model building and problem-solving. In many geography departments today, and my own included, the quantitative revolution has pushed us to develop curricula in which we are over-emphasizing the importance of quantitative techniques at the expense of research design methods, model building, and problem-solving. Note that I am not arguing against the need for training in statistics, computers, and cartographic techniques; instead I am saying that we must also emphasize the importance of such things as the philosophy of science, values, reasoning models, and survey research design. Solving a problem begins not with techniques, but with the ability to clearly define problems and hypotheses, with the ability to properly design a research project, with the knowledge of what previous research has been undertaken, and with an appreciation of how our values influence our conceptualization and resolution of research problems.

In effect, we need to develop what Gould has referred to

as the "open curriculum," [11] where the emphasis is upon providing our students with an appropriate background in theory, model building, statistics and math, and research design methods. I would add that we must also acquaint them with the alternative reasoning models that prevail throughout the scientific community so that they can appreciate where we have been and where improvements are needed in our problem-solving capabilities. This type of training is unlikely to occur if we continue to constrain the diversity and richness of our geographic and university curricula.

Finally, we must reorient and restructure our individual geography courses to focus more specifically on the problems of society. Courses must be designed that portray the complexity of contemporary problems and that demonstrate the relative importance of understanding the spatial dimensions and spatial processes that underlie these problems. Because of our particular expertise in analyzing spatial dynamics, our courses should clearly focus on alternative solutions to problems arising out of these dynamics. At the same time, we must encourage our students to develop strong interdisciplinary ties and to acquire the appropriate tools that are necessary for problem-solving. As Pirsig has noted, we must deepen our channel so that we can more effectively train our students for the future.

As an example of how we might restructure our geography courses to help our students meet the challenges of the future, I would like to suggest the following course objectives and course outline for an introductory college-level course in human geography. Although this outline is the one I am currently using at SUNY-Buffalo,

it is by no means perfected. In fact, it is still in an evolutionary stage. That is, I am in the process of revising and experimenting with it. I am offering it, therefore, not as a polished structure, but as a working draft. As you will note, the outline consists of sets of learning and teaching objectives, followed by appropriate content headings.

ON HUMAN SURVIVAL AND MOTORCYCLE MAINTENANCE: AN INTRODUCTION TO HUMAN GEOGRAPHY, CONTEMPORARY PROBLEMS, AND POLICY ALTERNATIVES

Geography 102--SUNYAB

PART ONE: MANKIND AT THE TURNING POINT--IS IT TOO LATE?

"We will now discuss in a little more detail the struggle for existence." Charles Darwin, The Origin of Species (1859)

LEARNING AND TEACHING OBJECTIVES:

(1) *To identify the nature and complexity of problems that confront contemporary society in the United States and in the world community.*
(2) *To explore the various scales at which contemporary problems exist.*
(3) *To emphasize the urgency of finding solutions to societal problems.*
(4) *To examine what has apparently gone wrong in our struggle for survival and to suggest alternative strategies to resolve our dilemmas.*

A. The Complexity of Contemporary Problems: An Overview

1. The Dimensions of Human Problems--Examples
2. The Dynamic Interaction of Multiple Forces and Processes
3. The Problem of Priorities, Values, and Relevancy

B. Contemporary Problems and Scale Perspectives

1. Individual Space, Neighborhoods, and Urban Environments
2. Regional and National Spheres of Influence
3. The International Arena

C. The Urgency of Finding Solutions--Is There Time?

1. Battlefield Conditions Prevail
2. The Limits to Growth: Reality or Fallacy?
3. Mankind at the Turning Point: Which Scenario?

D. Solving Contemporary Problems

1. What Has Gone Wrong With Our "Motorcycle?"
2. Who is Responsible?
3. Bioethics--A Bridge to the Future??

PART TWO: THE GEOGRAPHER, REASONING MODELS, AND A TOOL KIT FOR MAINTENANCE AND SURVIVAL

LEARNING AND TEACHING OBJECTIVES:

(1) *To evaluate the various viewpoints and models geographers use to examine contemporary problems, and to demonstrate the value of interdisciplinary cooperation for effective model-building.*
(2) *To examine the contributions geographers have made to problem-solving and to describe the variety of job opportunities for trained geographers.*
(3) *To introduce scientific methods of discovery and of problem-solving.*
(4) *To review the variety of skills and tools that are necessary for motorcycle maintenance.*

A. The Geographer's Perspective and Reasoning

1. An Emphasis Upon Spatial Patterns, Systems, and Processes
2. Paradigms and Revolutions in Geography
3. Isomorphic Principles of Organizations and Spatial Systems: On Discovering the Value of Scientific Unity

B. The Relevancy of Geography for Contemporary Problem-Solving

1. The Spatial Context of Contemporary Problems
2. What Contributions Have Been Made? What Can Be Done?
3. Geographers at Work--Jobs and Opportunities

C. Research Designs for Scientific Geography

1. Methods of Scientific Discovery and the Matter of Values
2. Problem Definition and Hypothesis Testing
3. Measurement and Sampling in Geographic Inquiry

D. Tools for Geographic Analysis

1. Field Research Methods--Ivory Towers and Jeeps
2. The Language of Maps
3. Statistical Techniques and the Computer

PART THREE: THE SPATIAL FABRIC OF HUMAN SURVIVAL

LEARNING AND TEACHING OBJECTIVES:

(1) *To describe the spatial dimensions of contemporary problems.*
(2) *To compare the spatial fabric of the American society with that of other cultures.*
(3) *To introduce a variety of models appropriate for understanding and analyzing the dynamics of spatial systems.*
(4) *To examine alternative strategies for conflict resolution.*

A. Individual Space, Neighborhoods, and Urban Subsystems
   1. Identity and Function of Personal and Neighborhood Spaces
   2. Hierarchical Arrangements and Interactions of Urban Systems
   3. Diffusion Processes in an Urban Context

B. National and Subnational Systems
   1. The Mechanics and Malfunctions of the American Spatial System
   2. The Spatial System of Developing Nations--Growth, Competition, and Human Rights
   3. The Center-Periphery Paradigm of Interacting Forces

C. International Spatial Systems
   1. Ecosystems: Environmental Challenges and Man's Ecological Response
   2. Conflict Resolution in Political and Cultural Subsystems
   3. Economic Institutions and Spatial Inequalities

D. The Geographic Region as a Spatial Subsystem
   1. Regions as Mental Constructs
   2. Techniques of Regionalization
   3. The Region as a "Tool" for Problem-Solving: Opportunities and Limitations

PART FOUR: PROCESSES THAT UNDERLIE HUMAN SURVIVAL AND SPATIAL SYSTEMS

LEARNING AND TEACHING OBJECTIVES:

(1) *To emphasize the importance of process-oriented reasoning models in defining and resolving contemporary problems.*
(2) *To conceptualize the analysis of process within the framework of a general system model.*
(3) *To convey the importance of psychological, economic, social, and political processes in understanding the dynamics of contemporary problems, and in formulating geographic principles.*
(4) *To demonstrate how geographers have used process-models to conceptualize and to solve problems.*

A. The Study of Process

1. Basic Processes and Isomorphic Principles
2. A General System View of Process and Form
3. Process and Spatial Patterns--Toward a Conceptual Framework for Geographic Analysis

B. Psychological Processes and Spatial Systems

1. Fundamental Concepts: Behavior, Decision-Making, Cybernetics, Learning, and Choice
2. Psychological Processes and Contemporary Problems
3. The Geographer's Contribution to Problem-Solving and Policymaking

C. Economic Processes and Spatial Systems

1. Fundamental Concepts: Location, Specialization, Differentiation, Competition, Growth, Institutions, Exchange, and Welfare
2. Economic Processes and Contemporary Problems
3. The Geographer's Contribution to Problem-Solving and Policymaking

D. Social and Political Processes and Spatial Systems

1. Fundamental Concepts: Interaction, Movement, Cohesion, Institutions, Tolerance, Integration, Power, Conflict, Voting, and Communication
2. Social and Political Processes and Contemporary Problems
3. The Geographer's Contribution to Problem-Solving and Policymaking

PART FIVE: SUMMARY AND CONCLUSIONS

A. The World of Tomorrow--Can We Survive?
B. What Must Be Accomplished?
C. Evidences of the Unity of Science
D. How Can the Geographer Contribute?

In summary, it should be noted that within the time span of one semester, two weeks are devoted to PART ONE of the course outline, three weeks to PART TWO, three weeks to PART THREE, and seven weeks to PARTS FOUR and FIVE. So far, the reaction to the course structure has been favorable, although as I mentioned earlier, I am still unhappy with several parts of the course design.

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