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ABSTRACT

This learning package is a three-semester-hour, independent-study course in geography and cultures of the world designed for postsecondary, external degree students. Keyed to the commercially published textbook "Between Two Worlds: A New Introduction to Geography" (Boston, MA: Houghton Mifflin Company, 1973), the package consists of an administrator manual, "Goode's World Atlas," and a student study guide. The manual describes the course and outlines the roles and tasks of the tutor/grader. The study guide, which serves as the student's instructor telling him what material should be read, when to read it, and how to evaluate his progress, contains specific course objectives, diagnostic tests and keys, and practical exercises and keys for the five units which comprise the course. Students compare and contrast life within and among developed and developing nations. They contrast life in an isolated village of India with life in Washington, D.C., explore the extent to which the natural environment determines the level of modernity of a place, and examine elements in the underdeveloped nations which must be improved if progress toward modernization is to be made. Students read the objectives of each unit and take a diagnostic pretest. The guide refers them to textbook readings and to practical exercises for items missed. Students check their mastery of objectives with posttests. Final exams are required. Hard copies of the learning package, with or without the textbook, are available from the Institute for Personal and Career Development. Only the administrator manual and the study guide are on microfiche. (Author/RM)

Cultures Of The World

Administrative Manual

Institute for Personal and Career Development
Central Michigan University Press
Mount Pleasant, Michigan 48859

Printed in the United States of America

Contents

Preface

Geography 121 (Cultures of the World) is equivalent in context and number of credit hours to the course of the same title offered at Central Michigan University in the Department of Geography. The course introduces the student to a geographic investigation of the cultural worlds of mankind.

In our view, the world can be divided into two basic cultural systems: one is the world of modernity--the Western nations--and the other is the world of tradition--the non-Western countries. Among the former are Japan, Australia, New Zealand, the Soviet Union, and the countries of Europe and North America; the traditional world includes the countries of Asia, Africa, and Latin America. We also recognize a transitional world: selected countries that have progressed to middle ranges along several pathways of modernization. Traditional countries, scattered over various continents, include Uruguay, Argentina, South Africa, Hong Kong, Taiwan, South Korea.

Comparisons and contrasts within and among these cultural worlds are employed as a basic methodology of instruction for this course. The cultural worlds are compared in terms of geographic elements and their associations. The fundamental geographical elements include the physical environment, the population, and the culture of mankind. It is the last of these elements upon which this course concentrates.

Unit 1, "Modeling the Modern and Traditional Worlds," contrasts the way of life in an isolated village of India with the diverse life styles in a highly interconnected modern metropolis of the Western World. The student comes to recognize some of the fundamental differences between the modern and traditional worlds.

Unit 2, "Natural Influences on the Modern and Traditional Worlds," compares the interrelations of the physical environment with each of the two cultural worlds. Specifically, it explores the extent to which the natural environment "determines" the level of modernity of a place.

Unit 3, "Cultural Indicators of the Modern and Traditional Worlds," analyzes the nature of culture. The unit introduces the student to one means of cultural classification. Also the student learns two contrasting sets of cultural characteristics, one for each specific cultural world.

Unit 4, "The Modern World," deals exclusively with the modern world. It delves into some of the complex interrelationships among the variables of modern countries such as a society's degree of modernization in relation to (1) food production (2) transportation and communication (3) employment patterns (4) energy consumption, and (5) urban structure.

Finally, unit 5, "The Traditional World," explores the traditional world's cultural components and briefly examines elements that must be improved if progress toward modernization is to be made.

An Explanation Of Self-Instructional Materials

This course has been designed to allow the student to work independently while achieving mastery of the performance objectives specified in each unit of instruction. If the student uses the materials properly, mastery should be attained.

To help the student succeed, the following components are included in each unit of instruction:

A list of Performance Objectives appears at the beginning of each unit and tells the student exactly what content is to be mastered.

A Study Directory follows the objectives. It specifies which textbook readings, practical exercises, supplementary exercises, and self-diagnostic test items must be completed for each objective.

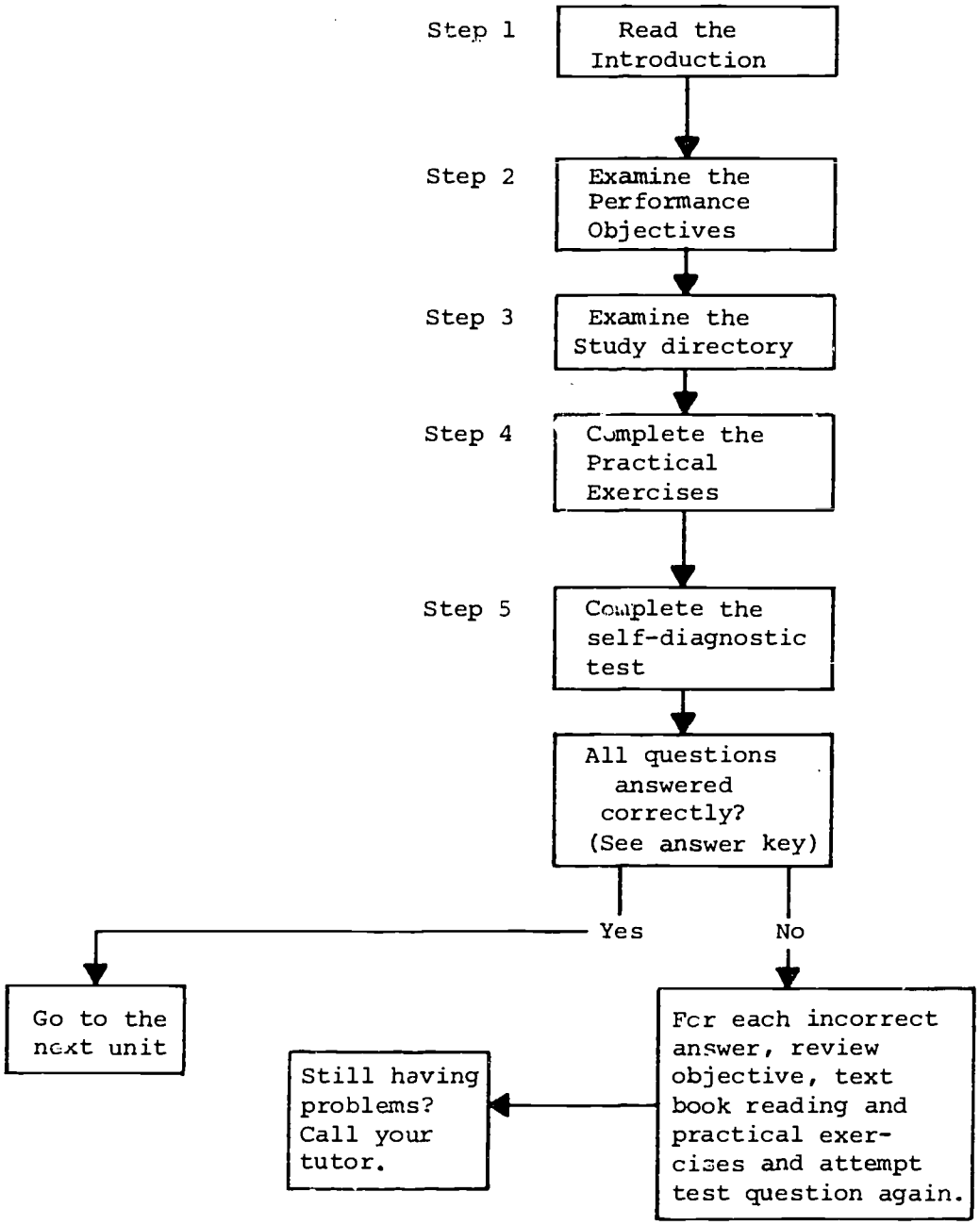
The Practical Exercises provide practice assignments that help the student meet each objective. There is at least one exercise per objective. An answer key appears at the end of the section so that the student may check his answers.

The Self-Diagnostic Test enables the student to determine if she has acquired the competencies specified by the performance objectives. At least one item has been developed for each objective. If the student can correctly answer all the test items, she has acquired the unit competencies. A test key is provided.

The student is also provided with a Study Map which graphically indicates the sequence to be followed in each unit. The study map is reproduced on the next page.

At the conclusion of a specified number of units, the student is required to take a credit examination. This exam contains at least one item for each objective.

STUDY MAP


Step 1
Read the Introduction
Step 2
Examine the Performance Objectives
Step 3
Examine the Study directory
Step 4
Complete the Practical Exercises
Step 5
Complete the self-diagnostic test
All questions answered correctly? (See answer key)
Yes
No
Go to the next unit
For each incorrect answer, review objective, text book reading and practical exercises and attempt test question again.
Still having problems? Call your tutor.

Possible Problem Areas

The following comments are intended to forewarn the tutor about specific portions of the course which may be possible problem areas for students. Tutors are expected to report additional problems to the Institute for Personal and Career Development.

Students may fail to read the "Instructions to the Student" prior to starting the Study Guide units. This will deprive them of some insight into the format and how materials are most efficiently used.

Occasionally a student will be confused by the flowchart called the "study map." Tutors who get phone calls about this problem should ask the students to look at their own maps while she or he directs them through the sequence, as indicated by arrows, explaining each step.

Students who have never experienced a self-instructional course may not realize the importance of using the materials as intended. They may try skipping material or skimming, even though it is more appropriate to study diligently by following the correct sequence.

Students may disregard the importance of the performance objectives for study purposes. After they complete the self-diagnostic test and the first credit examination, they should realize the importance of objectives in specifying areas of emphasis for study.

Many learners will misuse the self-diagnostic test. They will try to complete the test before really being prepared. This undermines the diagnostic benefit of the test for pinpointing those objectives and related exercises learners must review before proceeding to the next unit or taking the credit examination. In this case students are using the self-diagnostic test as a practical exercise and should be encouraged to complete the test only at the conclusion of the practical exercises.

Although practical exercises are useful in the learning process, they do not serve the same purpose as the self-diagnostic test. The practical exercise is a teaching device, while the self-diagnostic test is an evaluation device. If students are to be successful they should complete every practical exercise.

When a student calls with a problem, be certain that his or her difficulty does not stem from the inappropriate use of the materials. Be certain that all materials (textbook(s), student's study guide, and the tutor's guide) are available to you when a student calls for help.

SPECIFIC POTENTIAL PROBLEMS

A unit by unit assessment of potential problems that students may encounter is given below. The list is by no means exhaustive; it simply represents some problems that students have already reported.

Unit I: Modeling the Modern and Traditional Worlds

Question five of the self-diagnostic test may occasionally elicit an incorrect response. Some students select "B" and some select "D" as the correct answer. However "B" would represent a more traditional society such as that of Ramkheri. "D," on the other hand, would represent a more modern (actually, transitional) society, and would not be characterized by reliance on local craftsmen.

Unit II: Natural Influences on the Modern and Traditional Worlds

Some of the content of unit two is subjective and may result in a variety of answers to some questions.

Practical Exercise 1: This is a discovery exercise whose answer in the key should alleviate problems that may have surfaced in the student's attempt to determine an answer.

Practical Exercise 2: Note the addition of percentages, which help to qualify the adjective "predominantly." To some students, 51% implies predominance, which is an incorrect assumption.

Unit III: Cultural Indicators of the Modern and Traditional Worlds

The general purpose of unit three is to provide the student with an understanding of culture and of its parameters in modern, transitional, and traditional societies. There are two possible sources of difficulty and these relate to the instructions for completing practical exercises four and five. It would be beneficial for the tutor to work out these exercises so that he or she may be prepared to offer help when it is requested.

Unit IV: The Modern World

Practical exercise five contains instructions for completing a number of profiles. Some students may not be able to follow the directions. The tutor should go through the exercise carefully to be prepared to answer questions.

Practical exercise twelve also contains some complex directions. The tutor is also urged to complete that exercise.

Unit V: The Traditional World

No problems are anticipated.

The Tutor's Role

It is important for the tutor to become very familiar with the course textbook(s), the instruction provided by the student's study guide, the nature of self-instruction (as outlined on the preceding pages), and this manual. Familiarization with study materials will facilitate the understanding of learner problems. The tutor is urged to carefully read the study guide and to complete--or at least analyze--all the exercises and tests. Only at that time will the tutor be in a position to provide the kind of help a student may need.

Tutors may not change the course in any manner. The course content, instructional sequence, instructional strategies, and evaluation instruments will be changed only through the systematic processes of instructional technology under the supervision of professional developers. Because of the objective nature of learning criteria for this course, the tutor has almost no interpretative role to perform.

Tutors must be available to students to help them when they encounter problems. Normally, contacts will be initiated by the student by telephone; however, students may occasionally wish to visit with the tutor personally. Tutor/student contacts should be recorded and the student's problem explained for evaluation purposes. Tutors should submit explanations to the Institute for Personal and Career Development. Eventually, when the course has been revised to satisfy learner needs, the number of tutor/student contacts should be minimal.

The tutor will be expected to make the first telephone contact with each student. She or he should introduce herself or himself and indicate availability for assistance to the student when a problem arises.

When the tutor does receive a call for help, the student must be told not to proceed to a subsequent unit until the difficulty has been alleviated. Further, the student should be reminded to review those textbook readings, practical exercises, and self-diagnostic test items related to the difficulty.

Cultures Of The World

Study Guide

Charles Howard Richardson, Ph.D.

Institute for Personal and Career Development
Central Michigan University Press
Mount Pleasant, Michigan 48859

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Contents

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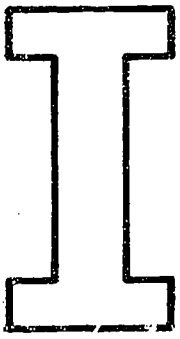
Cultures of the World was developed by the Division of Instructional Resources and the Institute for Personal and Career Development of Central Michigan University.



Introduction To The Course

Cultures of the World introduces the student to a geographic investigation of the cultural worlds of mankind. In our view, the world can be divided into two basic cultural systems: one is the world of modernity--the Western nations--and the other is the world of tradition--the non-Western countries. Among the former are Japan, Australia, New Zealand, the Soviet Union, and the countries of Europe and North America; the traditional world includes most countries on the continents of Asia, Africa, and Latin America. We also recognize a transitional world: selected countries that have progressed to middle ranges along several pathways of modernization. Traditional countries, scattered among various continents, include Uruguay, Argentina, South Africa, Hong Kong, Taiwan, South Korea.

Comparisons and contrasts within and among the countries of these cultural worlds are employed as a basic methodology of instruction. Most exercises are based on recent statistics taken during the decade of the 1960's (Oxford Economic Atlas, 4th ed., 1972). The cultural worlds are compared in terms of geographic elements and their associations. The fundamental geographical elements include the physical environment, the population, and the culture of mankind. It is the last of these elements upon which this course concentrates.

Unit one contrasts the way of life in an isolated village of India with the diverse life styles in a highly interconnected modern metropolis of the Western World. The student comes to recognize some of the fundamental differences between the modern and traditional worlds.

Unit two compares the interrelations of the physical environment with each of the two cultural worlds. Specifically, it explores the extent to which the natural environment "determines" the level of modernity of a place.

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Finally, unit five explores the traditional world's cultural components and briefly examines elements that must be improved if progress toward modernization is to be made.

STUDY GUIDE

Instructions To The Student

AN EXPLANATION OF SELF-INSTRUCTIONAL MATERIALS

This self-instructional course has been carefully designed to assure the participant success. For most efficient use of these materials you must become familiar with the organization of the course.

A short Introduction outlining the contents appears at the beginning of each unit. Such an overview is important for it gives you a perspective of the unit.

Once you have read the introduction, you should carefully examine the Objectives. Objectives tell you exactly what content you must learn and how you will be tested.

A Study Directory follows the objectives. This directory specifies the textbook readings, supplementary readings, taped lectures (if these are provided), and practical exercises you must complete in order to acquire the competency specified by each objective. The directory also identifies the self-diagnostic test item which you should complete for each objective.

The Practical Exercises provides practice assignments to help you satisfy each objective. A key appears at the end of the practical exercises so that you may check your answers.

The Self-diagnostic Test will enable you to determine if you have acquired the competencies specified by the performance objectives. At least one test item has been developed for each objective. If you can correctly answer all the test questions, you have acquired the competencies specified by the objectives. You may check your answers by referring to the Self-diagnostic Test Key.

The self-diagnostic test key also tells you to which objective each test question is related. In the event you do not answer a question correctly, you should re-examine the objective, complete the related practical exercise, and then attempt the question again. You should not begin a subsequent unit, nor should you take a credit examination until you can correctly answer all the questions of the appropriate self-diagnostic tests.

THE STUDY MAP

The procedures outlined in the study map on the facing page will be used throughout this course. To help you to understand these procedures each step is explained below.

STEP 1: Read the introduction to the unit.

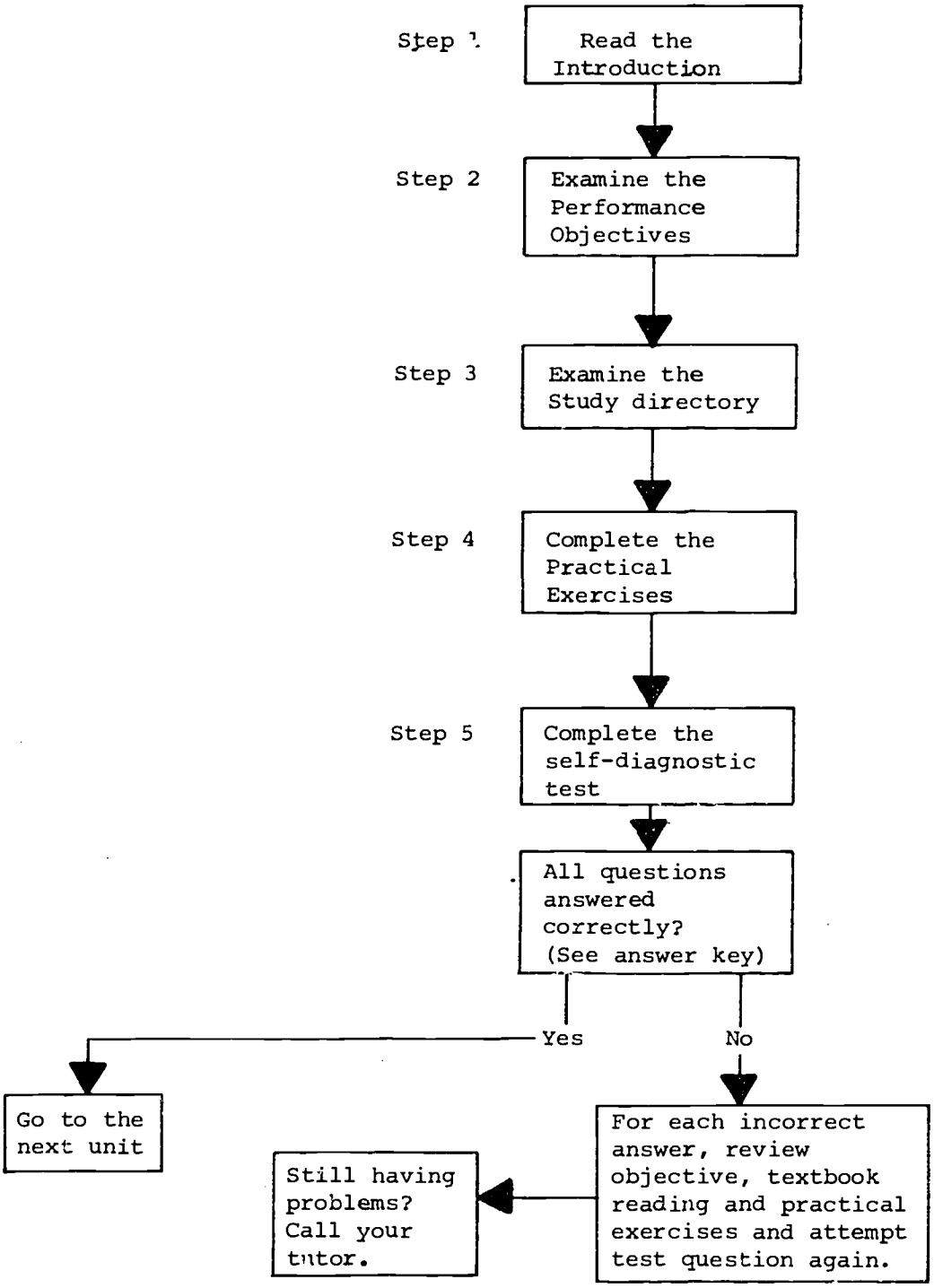
STEP 2: Next, turn to the performance objectives. Examine them carefully to see what you will be expected to do.

STEP 3: Turn to the study directory which will tell you exactly what to do in order to acquire the competencies for each objective.

STEP 4: Complete the practical exercises. These exercises provide the instruction designed to help you to master the unit's objectives. An answer key follows the exercises.

STEP 5: You should attempt the self-diagnostic test only when you can correctly answer each of the practical exercise questions. This test will permit you to evaluate your progress. If you can correctly answer all questions you may go to the next unit; if you make one or more errors, you should re-examine the objective (or objectives) and complete the tasks outlined in the study directory for that objective (or objectives). Finally, you should again try to answer the test questions which you originally answered incorrectly. At this point, you can go to the next unit.

STUDY MAP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All questions answered correctly? (See answer key)
Yes
No
Go to the next unit
For each incorrect answer, review objective, textbook reading and practical exercises and attempt test question again.
Still having problems? Call your tutor.

MATERIALS IN THE PACKAGE

Textbooks: Robert A. Harper and Theodore H. Schmudde. Between Two Worlds: A New Introduction to Geography. Boston: Houghton Mifflin Company, 1973

Atlas: Edward B. Espenshade, Jr. and Joel L. Morrison (Eds.) Goode's World Atlas. Chicago: Rand McNally and Company, 1974

Study guide: Charles H. Richardson, Cultures of the World: Study Guide. Mount Pleasant, Michigan: Central Michigan University Press, 1975

EXAMINATION PROCEDURES

Your final grade will be determined by your performance on a number of credit examinations. When you have completed a specified number of units you will be required to take an exam based on those units.

EXAM	UNITS COVERED
1	1-2-3
2	4-5

When you are ready for an examination, follow the procedures specified by the Institute to arrange for its administration.

GRADES AND GRADING

Your final grade will be based on your total score on the exams. If you obtain a total score of 90% - 100% you will receive an "A" for the course. Additional details are given below:

Percent of Total Score	Final Grade
90 - 100	A
80 - 89	B
70 - 79	C
69 and below	no credit

(re-examination required)

This course has been so designed that you should not get less than a "c". In fact credit will not be given for a lower grade. If you follow all procedures, read and complete all the assignments, and contact the tutor when you encounter difficulties, you should be able to get an "A"!

If you have any questions concerning grading procedures contact the Institute (517) 774-3865.

TIME LIMITS

It is recommended that this course be completed in twelve weeks or less. This will require perseverance and considerable work, but the learning will be more effective if the course is completed in a concentrated time period.

If you wish to complete all the course requirements in less time, you are encouraged to do so. There is no minimum time period.

In the event the course requirements are not completed in twenty-four weeks, you will receive a grade of "I" (incomplete). This "I" can be changed to a credit grade by completing all the course requirements. If, however, you do not complete the course within a period of twelve months and wish to continue, you will be required to register for the course again. You should consult the Institute's information handbooks for further details.

HELP!

What do you do if you need help?

If you have a problem related to course work, contact your tutor. If your question relates to missing materials, lost exam, inability to take an examination at a scheduled time, or any question involving the administrative procedures of the course, contact the Institute.

If after repeated efforts you cannot reach your tutor, contact the Institute either by mail or phone.

When you call the Institute, your questions will be dealt with quickly if you:

1. give your name and identify yourself as an IPCD student, and
2. state that you have a problem or question relating to the Cultures of the World course.

It may occasionally take some time to locate the person who can answer your question, but every effort will be made to answer all questions on the same day.

If, even after we've tried to solve your problem, you feel you still don't have the answer, tell us so, Let us try again.

COURSE EVALUATION QUESTIONAIRE

A Course Evaluation Questionnaire is to be completed by students using this instructional package. The information that you provide to the author and course designers helps to develop instructional packages which are better designed, are more effective forms of instruction, and will ultimately better serve the educational needs of students.

The Course Evaluation Questionnaire consists of two parts--a set of specific questions related to various aspects of this instructional package and a separate sheet for your personal reactions, opinions, constructive criticisms, and any comments you think will be helpful in future revisions of these materials.

Make no mistake! This, as other instructional packages, will be revised and improved by the comments provided by you and other students. Help us out.

Modeling The Modern And Traditional Worlds

INTRODUCTION

One of the concerns of geography is to promote an "understanding of the how and why of human life at particular places on the earth. Each place has its unique combination of locational, environmental, and human conditions, and it is the geographer's concern to understand how they interact."* Such an understanding can be achieved by analyzing the factors that have made a place what it is. Factors such as climate, soil conditions, and resources cannot be overlooked; however, examination of only those factors would result in a superficial analysis. Consequently, additional factors such as cultural characteristics and relations with distant places also need to be examined.

In this unit you will analyze Washington, D.C. and Ramkheri, India. These places represent extremes in that one is characteristic of the modern world and the other of the traditional world. Your analysis will reveal some of the factors which are characteristic of these two extremes.

*Robert A. Harper and Theodore H. Schmudde, Between Two Worlds: A New Introduction to Geography (Boston: Houghton Mifflin Company, 1973) p. 3.

PERFORMANCE OBJECTIVES

1. Given four possible conflicts between a metropolitan area and its ecological environment, select the one most applicable to Washington.

2. Given four reasons for inefficient agricultural production, choose the one that applies to Ramkheri and the traditional model.

3. Given a number of statements, select those that explain why change comes about so slowly in a traditional society such as Ramkheri.

4. Given a list of statements, identify those which depict the traditional world, and, finally, those which depict both models.

5. Given a description of a population center (i.e. village, town, or city) locate that center on the traditional-modern model and select from a number of statements those that support the choice for its location.

STUDY DIRECTORY

This Study Directory specifies exactly what you must do in order to meet the requirement of each objective. For example, in order to acquire the competency related to objective one, you will need to read pages 22-24 in your textbook, complete practical exercise one, and correctly answer question one of the self-diagnostic test.

Objectives	Pages to Read in Textbook	Practical Exercise Questions	Self-diagnostic Test Items
1	22-24	1	1
2	31-34; 44-45	2	2
3	43-45	3	3
4	2-47	4	4
5	-	5	5

PRACTICAL EXERCISES

1. At least one negative consequence of the modern interconnected system is its conflict with the local environment. List three or four of the conflicts that relate specifically to Washington D.C.

   a)

   b)

   c)

   d)

2. An analysis of the traditional agricultural system reveals many inefficiences. Analyze the agricultural system of Ramkheri and list these inefficiencies.

3. Describe how and what kinds of changes have taken place in Ramkheri. Why is there such great resistance to change?

4. Complete the charts that appear on this and the following pages. The column at the left of the charts contains a number of categories or topics related to modern and traditional societies. Space is provided to the right of each category so that you can fill in the information that is related to each category. Washington, D.C., and Ramkheri, India will act as representatives of the modern and traditional societies respectively.

TOPICS	SUMMARIZING STATEMENT
Influence of distant places on the local pattern of daily life	Washington: Ramkheri:
Daily flow of commuter traffic	Washington: Ramkheri:
Changes in individual life patterns due to seasonal climatic fluctuations	Washington: Ramkheri:
Diversity of commerical activities	Washington: Ramkheri:

TOPICS	SUMMARIZING STATEMENT
The degree of the individual's ties to the neighborhood and to the larger community	Washington: Ramkheri:
Degree of interaction between local commercial activities and distant places	Washington: Ramkheri:
Geographic segregation of different economic and social classes	Washington: Ramkheri:
The individual's familiarity with distant places	Washington: Ramkheri:
Degree of dependence on the local environment for agricultural production	Washington: Ramkheri:

TOPICS	SUMMARIZING STATEMENT
Effect of tradition on change	Washington: Ramkheri:
Occurrence of the most personal leisure time	Washington: Ramkheri:
Dependence on other individuals and craftsmen	Washington: Ramkheri:
Social and economic divisions among the populace	Washington: Ramkheri:
Amount of human energy that must be expended to produce a given amount of agricultural goods	Washington: Ramkheri:

TOPICS	SUMMARIZING STATEMENT
Types of energy sources that are utilized	Washington: Ramkheri:
Acceptance of innovation	Washington: Ramkheri:
Proportion of work force employed in service or management activities	Washington: Ramkheri:
Level of technological development	Washington: Ramkheri:

5.

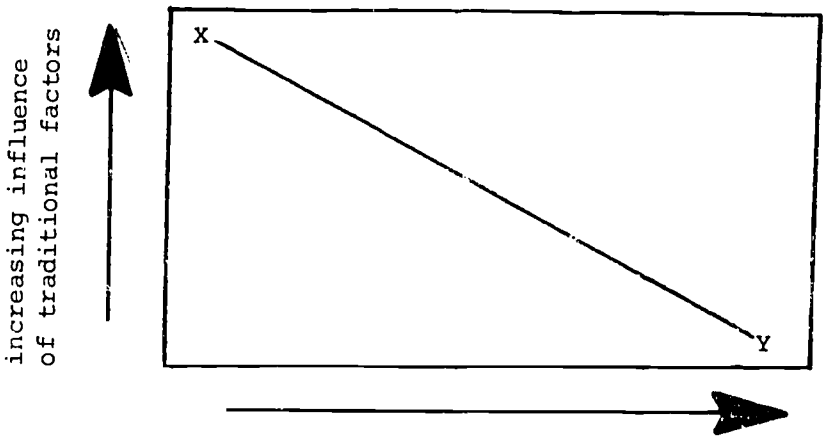


Fig. 1.1. Traditional-Modern Model

The diagram in figure 1.1 constitutes a model which allows the ranking of places according to the degree to which each is traditional or modern. A place which appears in the "X" position is a totally traditional society--much like the stone-age tribes that may still be found in such places as the Amazon River area and Borneo. A place which has no vestiges of the traditional system would be in the "Y" position. These two positions--"X" and "Y"--are extremes, and few places in the world would fit those positions. Most places still are influenced by both the modern and traditional systems and, therefore fall somewhere between "X" and "Y." Thus, to determine the location of any place on the diagram, one must examine the place in terms of the influence exerted upon it by modern and traditional factors such as those listed in the charts of question four.

(This question is continued on the following page.)

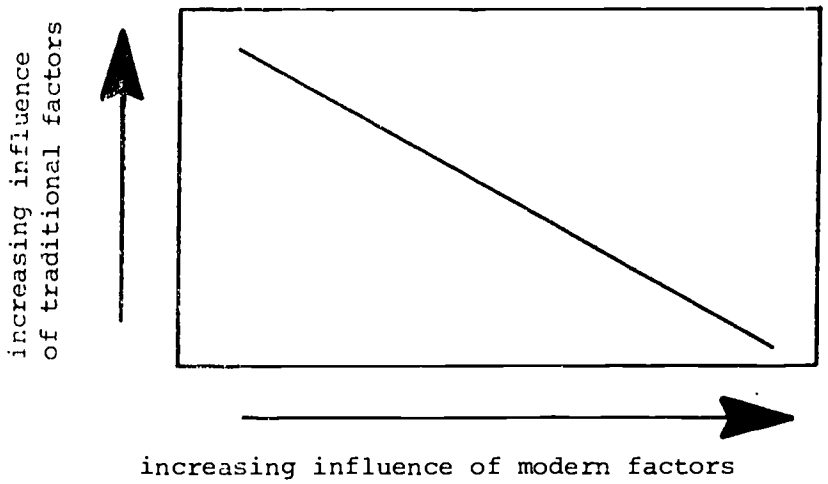


Fig. 1.2. Traditional-Modern Model

a) Place an "X" on the diagonal which would approximately indicate the location of Ramkheri on this traditional-modern model.

b) Place a "Y" on the diagonal which would approximately indicate the location of Washington D.C. in this traditional-modern model.

c) Which four of the following support your choice for the position you chose for Ramkheri?

1) Ramkheri is highly dependent upon distant places

2) Tradition greatly interferes with change

3) A large variety of energy sources are utilized

4) Ramkheri does not totally isolate itself from its neighbors

5) A high amount of human energy is expended in agriculture to produce a limited amount of agricultural goods

6) In a relatively complex social system, an individual depends on the skills of others for various products and implements

7) Even though it is slow, change does take place

d) Which five of the following support your choice for the position you chose for Washington D.C.?

1) A large variety of energy sources are utilized

2) In a complex social system an individual depends on the skills of others for various products and implements

3) Life patterns are dependent upon seasonal climate changes

4) The population is divided along economic and social lines

5) A relatively small proportion of the population is engaged in material or agricultural production

6) Local commerce is heavily dependent upon distant supplies

PRACTICAL EXERCISES KEY

1. The following are four contributors to the ecological conflicts characteristic of Washington D.C. These are not exhaustive and you may have correctly included others.

   a) The difficulty in expanding water storage and treatment facilities fast enough to keep up with the growing population

   b) Disposal of untreated sewage into the local rivers

   c) Air pollution from incinerators and auto emissions

   d) The demand for energy to run air-conditioning and heating systems is often greater than the supply

2. Some of the inefficiencies of the agricultural system of Ramkheri include:

   a) The use of primitive implements and farming procedures

   b) The incredibly huge amount of human labor that is required to farm an acre of land

   c) The use of primitive and inefficient forms of fertilizer

   d) The total reliance on animate sources of power

   e) Poor storage facilities which allow stored produce to rot before it can be consumed

3. While some change that is taking place in Ramkheri is motivated by the villagers, most originates with the Indian government; however, traditional ways are difficult to change. To the poor farmer, change holds great risks. His lack of knowledge regarding modern agricultural methods may result, for example, in improperly used fertilizer which may destroy his crop. Because they live on the brink of starvation, but within a system which has consistently provided them with food, they may not be willing to take the risks inherent in a new method of production.

   Some change has taken place; examples include: a) the transfer of local power from the village headmen to one village committee; b) the outlawing of the caste system, animal sacrifices, and arranged marriages; and c) agricultural innovation.

4. See the following charts:

TOPICS	SUMMARIZING STATEMENT
Influence of distant places on the local pattern of life	Washington: The magnitude of outside movement into Washington makes it distinctive among cities. Washington's very existence is dependent for food on outside sources, and a great deal of government responsibilities lie outside of the D.C. area. Ramkheri: Although the villagers have contact with the outside world, it is the tiny space within a few miles of the village center that supports the basic needs of the people.
Daily flow of commuter traffic	Washington: The mass of traffic comes from the outlying areas, heads into downtown Washington each workday morning, and returns to the suburbs in late afternoon. Ramkheri: Each morning the farmers leave their village residences to work in the outlying fields. During the evening they return to their village homes.
Changes in individual life patterns due to seasonal climatic fluctuations	Washington: Life patterns do not change much seasonally in Washington D.C. The life patterns change more on weekends and holidays. Ramkheri: Agriculture starts in mid-April. From then until mid-July, plowing, planting, and weeding are done. Harvesting and threshing are done from October through December. Work lessens in January, and in April festivals begin.

TOPICS	SUMMARIZING STATEMENT
Diversity of commerical activities	Washington: A great variety of goods are available for private citizens. Much government commerce is related to national defense, public services, and international affairs. Ramkheri: Most of the villagers live in a subsistence economy (i.e., they consume whatever they produce), but a limited amount of trade exists in locally produced basic products.
The degree of the individual's ties to the neighborhood and to the larger community	Washington: People of Washington commute from their own neighborhoods back and forth to work in the central city. Most of their needs, however, are served by the shopping and entertainment centers of the local community. Ramkheri: People of Ramkheri are tied to their own neighborhoods by virtue of caste. They circulate largely from their own neighborhoods to surrounding fields if they are farmers.
Degree of interaction between local commercial activities and distant places	Washington: Most goods that enter Washington's commercial system originate outside the city. Local businessmen are dependent on outside supplies, and the existence of the large bureaucracy of the federal government is dependent upon national and international affairs. Ramkheri: Most of the commercial activities of Ramkheri are local; that is, between village artisans and the local farmers.

TOPICS	SUMMARIZING STATEMENT
Geographic segregation of different economic and social classes	Washington: Washington, like most modern cities, is characterized by its central business district and outlying shopping centers. It is most distinctive for the quarters which house the federal government. Socially, the ghettos of the central city contrast with suburbs in Maryland and Virginia. Ramkheri: At the center of the village is the school, the headquarters of the village committee, and a temple. Persons of a high caste live in neighborhoods near the center of town. Farmers live farther out, and lowest caste members dwell on the fringes.
The individual's familiarity with distant places	Washington: Washingtonians are kept aware of distant places and events through travel and the news media (including radio, TV, movies, newspapers, magazines). Ramkheri: The people of Ramkheri have not traveled far from their village. Usually, the farthest trip is a pilgrimage to the holy place. News reaches them mainly through the public loud speaker that broadcasts radio programs in the village square.
Degree of dependence on the local environment for agricultural production	Washington: Washington imports virtually all of its agricultural produce from outside the metropolitan area. Ramkheri: The villagers depend on their own locally-grown supplies of food. The farmers export very little to neighboring villages.

TOPICS	SUMMARIZING STATEMENT
Effect of tradition on change	Washington: Rapid change is characteristic of Washington and the modern world. Economic and social changes affect the lives of all Washingtonians. Ramkheri: The majority of villagers of Ramkheri live a static way of life in the traditional mode. Here, change presents a great risk to their well-being. They have little capital reserves to cope with failure.
Occurrence of the most personal leisure time	Washington: Washingtonians have more leisure time because they work a five day week and because greater specialization makes their lives free of much physical labor. Ramkheri: The villagers of Ramkheri have less leisure time because their farm work keeps them busy much of the year, and the self-sufficient nature of their lives keeps them occupied in physical labor. Freedom from agricultural work is determined solely by the seasons.
Dependence on other individuals and craftsmen	Washington: Washingtonians live in a much more economically specialized and inter-dependent society. They depend on others, especially outsiders, for their needs. Ramkheri: The villagers of Ramkheri are primarily self-sufficient, producing most of their own food. Their limited dependence relates primarily to basic needs met by local craftsmen.

TOPICS	SUMMARIZING STATEMENT
Social and economic divisions among the populace	Washington: There are definite social and economic divisions among the people of Washington. Generally, those individuals sharing a higher socioeconomic status live in the suburbs while low-income individuals reside in the poor sections of the inner city. Ramkheri: The population of Ramkheri is divided along social and economic lines. Individuals of different socioeconomic status live in different parts of the village.
Amount of human energy that must be expended to produce a given amount of agricultural goods	Washington: Modern technology has made it possible for one man to produce enormous amounts of food. Thus, a high amount of human energy results in the production of great quantities of food. Ramkheri: In the absence of modern technology, one man can farm only one or possibly two acres. Thus, a high amount of human energy results in the production of very small quantities of food.
Types of energy sources that are utilized	Washington: Both animate and inanimate energy sources are used in modern societies like Washington. Because of a greater reliance on inanimate energy sources like oil products, electricity and steam, a high level of production can be maintained. Ramkheri: Ramkheri relies solely on animate (human and animal) energy sources. Consequently, production is low.

TOPICS	SUMMARIZING STATEMENT
Acceptance of innovation	Washington: Generally, Washingtonians are quick to adopt innovations if these appear to be useful. Mass advertising pushes many novelties and gadgets on the market. Ramkheri: The villagers are tradition bound and are generally unwilling to adopt new products or new ways of doing things.
Proportion of work force employed in service or management activities	Washington: The majority of Washingtonians are employed in tertiary nonproductive activities, (government, private services, management or financial services). Ramkheri: In Ramkheri most residents are employed in agriculture and artisan manufacturing. These are primary and secondary activities. A small proportion is employed in services (tertiary activities).
Level of technological development	Washington: Washington, like the cities of the Western industrial nations, is characterized by advanced technology in mechanization, automation, and mass production. Ramkheri: Ramkheri, like traditional agricultural villages of the nonindustrial nations, depends on simple tools, animal power, and manual labor for production.

5.

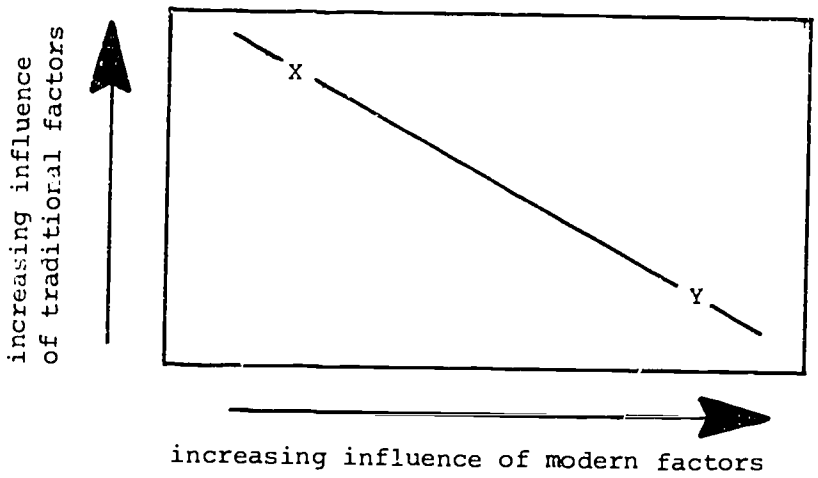


Fig. 1.3. Traditional-Modern Model (X and Y denote approximate locations of Ramkheri and Washington D.C.)

a) Note the location of the X in the diagram in figure 1.3 that represents the approximate location of Ramkheri in the Traditional-Modern Model. Societies still living a stone-age existence would appear at the extreme upper left of the diagonal. Societies more modern than Ramkheri would appear further down on the diagonal. Your answer is correct if you placed your "X" between the two small lines on the diagonal.

b) The "Y" represents the approximate location of Washington on the diagonal.

c) 2, 4, 5, 7

d) 1, 2, 4, 5, 6

SELF-DIAGNOSTIC TEST

1. In the metropolitan area of Washington, a conflict between nature's ecosystem and man's way of life is evidenced by:

   a) A water supply which requires extra treatment

   b) A population density which is uncomfortably high

   c) An atmosphere that cannot absorb all the wastes that are produced

   d) a and c

2. Ramkheri's agricultural production methods are inefficient because:

   a) Too much animate power and not enough inanimate power is applied per farm worker

   b) Too much inanimate power and not enough animate power is applied per farm worker

   c) Use is not made of petroleum-derived fertilizer

   d) a and c

3. In the traditional society, as in Ramkheri, change does not come about quickly because:

   a) Traditional agricultural techniques that have been followed for many generations are resistant to change

   b) Individuals perceive personal economic risk in changes that are related to their livelihoods

   c) Traditional interpersonal relationships may be altered

   d) The government does not support change

   e) a and b

   f) b and d

   g) a, b, and c

4. Place a "T" beside those statements that relate only to the traditional model, an "M" beside those that relate only to the modern model, and an "X" beside those that relate to both models.

___a) The individual's life is extensively affected by distant places (both national and international)

___b) In general, individuals travel out of the population center to work

___c) Life patterns are dependent upon seasonal climatic changes

___d) Commerce is highly diversified and varied

___e) The population is divided along economic and social lines

___f) The amount of human energy expended per worker results in a disproportionate amount of production. That is, one worker can produce a great deal.

___g) A large variety of energy sources are utilized, and the total energy applied per farm worker is high

___h) There is a great degree of dependence on the local land area for agricultural production

___i) Tradition greatly interferes with change

___j) Leisure time is relatively equally spread throughout the year

___k) Individuals depend on the skills of others for various products and implements

___l) Except for travelling to their places of work, individuals are closely tied to their own neighborhoods

___m) Commerce is heavily dependent upon interactions with distant places

___n) Individuals of different social and/or economic backgrounds live in different residential areas

___o) Most residents are unfamiliar with foreign patterns of life

___p) Innovation is feared and mistrusted

___q) A large percentage of the work force is engaged in service and management activities

5. The town of Tajis is located on a broad fertile valley whose soil and climate permits the planting and harvesting of an abundance of crops. Fortunately for the farmers of the area, Tajis has access to a steady supply of petroleum-based products and has been able, with the help of the government, to purchase and use efficient petroleum-based fertilizer and simple powered farm equipment. This factor has enabled Tajis to grow more than it can locally consume, and, thus, many farmers are able to sell their produce to commercial wholesalers in the nearby city. In return, many of the people of Tajis have been able to buy simple contemporary luxuries such as radios, bicycles, and, even in some cases, motorcycles and small cars. The latter, however, are rare.

   Tajis is largely a farming community whose daily and seasonal activities are determined by the climate. Springtime heralds the necessity to prepare the soil for the planting of crops. The summer is spent caring for the newly planted crops. During the fall, everyone, including women and children, must participate in the harvest. Most people have little to do during the winter months, and it is during this time that the 500 citizens of Tajis celebrate their various ritual holidays.

   The people of Tajis are fairly self-reliant. Local craftsmen are available and, indeed, earn their livelihoods serving the various needs of the farms and local shopkeepers as mechanics, tailors, carpenters, blacksmiths, and so on. While many craftsmen are paid with money, others still sell their services in return for farm produce.

   Most local laws and customs have not changed for centuries; however, change has occured most notably in the area of agricultural reform. Men and women are still expected to marry early and to have large families. The young are expected to care for their parents when they are no longer able to work.

   As with many communities, the wealthier individuals have built their larger homes at a distance from the masses of population. Since these individuals have freed themselves from work in the fields by hiring farm laborers, they have generally been the people who have time to be responsible for local law enforcement. Fortunately, custom and tradition have rigidly dictated interpersonal relationships, so few instances of friction occur among the people of Tajis.

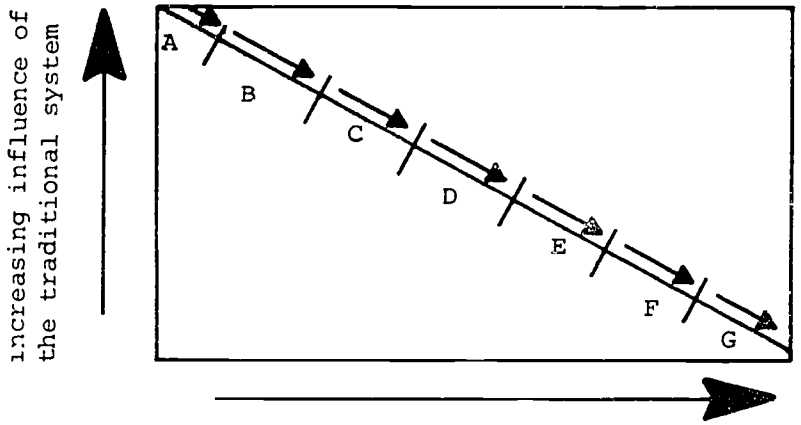


Fig. 1.4. Traditional-Modern Model

a) Based on the information you just read at which of the letters on the diagonal would you place Tajis?

b) Which of the following statements support your choice for your placemen of Tajis on the diagonal?

1) The almost total reliance on animate energy and reluctance to change

2) Relatively heavy reliance on local custom

3) Sophisticated technology, interdependence and familiarity with other places

4) A rapidly advancing technology combined with growing commercial markets

5) Dependence on the local environment for products combined with the slowly growing influence of technology, change, and trade

6) A growing interdependence with distant places

SELF-DIAGNOSTIC TEST KEY

1. d)

2. d)

3. g)

4. M a) The individual's life is extensively affected by distant places (both national and international)

   T b) In general, individuals travel out of the population center to work

   T c) Life patterns are dependent upon seasonal climatic changes

   M d) Commerce is highly diversified and varied

   X e) The population is divided along economic and social lines

   M f) The amount of human energy expended per worker results in a disproportionate amount of production. That is, one worker can produce a great deal.

   M g) A large variety of energy sources are utilized, and the total energy applied per farm worker is high

   T h) There is a great degree of dependence on the local land area for agricultural production

   T i) Tradition greatly interferes with change

   M j) Leisure time is relatively equally spread throughout the year

   X k) Individuals depend on the skills of others for various products and implements

   X l) Except for travelling to their places of work, individuals are closely tied to their own neighborhoods

   M m) Commerce is heavily dependent upon interactions with distant places

X n) Individuals of different social and/or economic backgrounds live in different residential areas

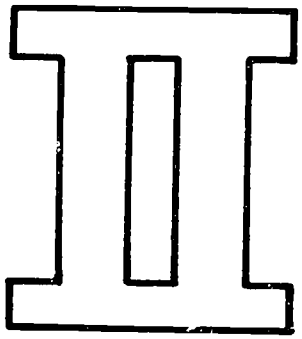
T o) Most residents are unfamiliar with foreign patterns of life

T p) Innovation is feared and mistrusted

M q) A large percentage of the work force is engaged in service and management activities

5. a) Tajis would be placed at the "C." "A" would represent the stone-age village and "B" a more traditional place like Ramkheri which has none of the modern conveniences of Tajis. "D" represents a transitional society which is actively shedding its traditional practices. "E," "F," and "G" are representative of more modern places.

2, 4, 5, 6



Natural Influences On The Modern And Traditional Worlds

PERFORMANCE OBJECTIVES

1. Given a number of statements select the one that correctly defines culture.

2. Given a list of examples, identify those that are cultural and those that are noncultural.

3. Given a number of statements select the one that correctly describes the advantages of a seasonal environmental work area.

4. Given an atlas, identify the characteristic environmental work (very limited, continuously high, or seasonal) for any specified area.

5. From a list of statements select the ones that most accurately identify the role of the natural environment in determining the extent to which a place is traditional or modern.

STUDY DIRECTORY

This directory specifies the assignments and self-diagnostic test items that must be completed for each objective.

Objectives	Textbook Reading Assignment	Practical Exercises	Self-Diagnostic Test Items
1	Chapter 4	1	1
2	Chapter 4	2	2
3	P. 109-118	7	3
4	P. 109-118	8	4
5	Chapters 3&5	3, 4, 5, & 6	5

PRACTICAL EXERCISES

1. The definition of culture is elusive. Probably such a definition can be most easily derived by analyzing that which is cultural from that which is noncultural. Two lists are given below. One list contains examples of phenomena that are predominantly noncultural; the other list contains examples of phenomena that are predominantly cultural. Neither list is exhaustive.

Noncultural	Cultural
a) virgin forests	a) language
b) mineral resources	b) religion
c) water resources	c) art forms
d) natural vegetation	d) institutions (political, social, educational, etc.)
e) native animal forms	e) technology (what is manufactured and the tools used as means for manufacturing)
f) topography	f) knowledge
g) soil	g) economies
h) temperature	h) political entities
i) precipitation	
j) climate	

Analyze the two lists. Try to identify those things that are a part of the cultural inventory (i.e., those things whose characteristics are culturally determined) and those things that are noncultural (i.e., those things whose characteristics are not culturally determined). What you are looking for is a generalization that underlies this difference. Write your answer in the space below.

2. The following are the titles of maps and other forms of information that appear in Goode's World Atlas. In the space provided next to each title, write CUL if the information reflects a predominantly (85% +) cultural phenomenon; NE if it reflects a predominantly (85% +) natural phenomenon, and, NECUL if the information reflects a roughly equal combination of environmental and cultural phenomena.

a) Portrait (pp. 2-3) _____
b) Political (pp. 4-5) _____

(1) Comparative land areas _____
(2) Comparative populations _____

c) Physical (pp. 6-7) _____
d) Landforms (pp. 8-9) _____
e) Climatic regions (pp. 10-11) _____
f) Temperature (pp. 12-13) _____
g) Precipitation (pp. 14-15) _____
h) Natural vegetation (pp. 18-19) _____
i) Great soil groups (pp. 20-21) _____
j) Population distribution (pp. 22-23) _____
k) Population density (pp. 24-25) _____

(1) Rural/urban population ratios (p. 25) _____

l) Birth rate/death rate (p.26) _____
m) Population increase/urbanization (p. 27) _____
n) Gross national product (p. 28) _____
o) Literacy (p. 28) _____
p) Languages (p. 29) _____
q) Religions (p. 29) _____
r) Predominant economics (pp. 30-31) _____

(1) Occupational structure of selected areas (pp. 30-31) _____

s) Major agricultural regions (pp. 32-33) _____
t) Wheat production (p. 34) _____

(1) Wheat trade (p. 34) _____

u) Utilization of grapes (p. 37) _____
v) Cattle-world total (p. 41) _____
w) Wool production (p. 42) _____
x) Forest regions (p. 42) _____

(1) Wood production (p. 42) _____

y) Copper reserves (p. 43) _____

(1) Refined copper consumption (p. 43) _____

z) Major overseas movement of iron ore (p. 44) _____

aa) Mineral fertilizers (p. 47) _____

bb) Developed water power (p. 47) _____

cc) Potential water power (p. 47) _____

dd) Fuel and power consumption (p. 49) _____

ee) Energy consumption (p. 50) _____

ff) Ocean transportation (p. 51) _____

gg) Surface transportation _____

(1) Inland waterways (p. 52) _____

(2) Cars and trucks (p. 52) _____

3. In this exercise you are required to examine the maps and respond to the question contained in each section below. The exercise will provide you with the opportunity to compare a modern society--the United States--with one that resembles the traditional model--the People's Republic of China. The basis of the comparison is the natural environment. In completing this exercise, you should try to determine which of the following two statements is correct:

a) The natural environment is a major factor that determines the extent to which a country is traditional or modern

b) The natural environment is only a minor factor in the extent to which a country is traditional or modern.

For each of the following sections:

--Read the given information, in each section of the chart below

--Find the maps to which reference is made

--Compare the United States and China with reference to the given information. Use only information in the atlas which is "predominantly noncultural"

--Determine whether the factor under consideration is characteristic of China only (CO), characteristic of the U.S. only (USO), characteristic of both equally (CUS); characteristic of China to a much greater (75% greater) extent than to the U.S. (CM); or is characteristic of the U.S. to a much greater (75% greater) extent than of China (USM).

Place a check in the correct space to indicate your answer.

	CO	USO	CUS	CM	USM
a) Mineral resources: Large countries, because of their great land area, can be expected to have similar mineral resources. Use the information on pages 4-5 and 43-49 of your atlas to determine the applicability of this statement to the U.S. and China.					
b) The humid mesothermal climate (Caf) is associated with the growth of forests. Several different kinds of forests that act as sources of timber, pulp, and paper are found in this climate. From a map of climate (pp. 10-11) and natural vegetation (pp. 18-19), determine the applicability of this statement to the U.S. and China.					
c) Which country has the greater winter precipitation in its eastern half? (p. 15)					
d) Which country shows a greater increase of summer rainfall over winter precipitation in its eastern half? (p. 15)					
e) To an extent, at the national scale, the density of population distribution varies directly with the distribution of rainfall. That is, up to a point, there is greater population where there is greater rainfall and less where there is scanty rainfall. To which country does this relationship apply? (pp. 15, 23)					

f) Which country has the greater proportion of arid areas? (pp. 10-11, 14-15)

g) Which country has the least commercial wood production? (pp. 30-31)

h) On the average, total natural resources may be comparable between large areas of equal size, but, for any single type of resource, there are usually great variations in quantity. To which country does this apply in terms of copper reserves? (p. 43)

i) Based on the bar graph of iron ore reserves, which country has the greatest supply? (p. 45)

j) Water power potential is dependent upon heavy precipitation, large watersheds, and rugged terrain. A nation with this combination of factors combined with a large land area will rate high in potential water power. Which country has the greater water power potential? (p. 47)

k) Coal reserves were formed in areas of former inland seas where forests died and were covered with layers of sediment. The northern hemisphere has benefited most from this resource. Which of the two nations has the greater coal reserves? Consider the coal reserves bar graph for your answer. (p. 48)

CO	USO	CUS	CM	USM

l) Which of the two countries has the greater proven petroleum reserves? (p. 48)

m) In some places natural gas reserves are associated with proven petroleum reserves. Which country has the greater gas reserves? (p. 49)

n) Very few climates have average annual water surpluses, but the Caf climate (humid mesothermal climate) of southeastern U.S. and China have annual water surpluses. Which nation has greater water surpluses for this climate? (Atlas, pp. 10-11, text, pp. 112-113)

CO	USO	CUS	CM	USM

4. In this exercise you will undertake, in a slightly different way from exercise three, a comparative analysis of the United States and China. Instructions for this comparison follow:

   Use the chart below for your analysis.

   Compare the two countries by following the east to west direction along the parallels indicated in the chart.

   Comparisons are to be made for types of climate, vegetation, and soil (find the appropriate maps in the atlas).

   List, for each country, the types of climate, vegetation, and soil that you find along the parallel.

Environmental Factor	Parallel	United States	China
Climate	40°		
	35°		
Vegetation	40°		
	30°		
Soil	40°		
	30°		

5. It was stated at the beginning of exercise four that the United States is a predominantly modern society and that China is predominantly traditional. Your comparison of the natural endowments of these two countries should have enabled you to come to a conclusion regarding the cause and effect relationship between natural environment (or endowment) and the extent to which a society is modern or traditional.

   To complete the chart below, you will need to review the information you collected in the two map exercises. This chart will serve to summarize that information. The left column lists a number of natural endowments. The three columns to the right are the comparisons that may be made between the U.S. and China. For each endowment place a check in the column at the right that constitutes a correct comparison. If the endowment is "different," place the name of the country that is favored in the "different" column.

Natural Endowments	Comparison		
	Identical	Similar	Different
Climate			
Mineral Resources			
Virgin Forests			
Potential Water Power			
Landforms			

6. On the basis of the previous map exercise, select the statement that you think is valid. Try to determine the validity (truthfulness) of each statement only on the basis of the data you collected during the map exercise.

   a) The natural endowment (environment) is a major factor that determines the extent to which a country is traditional or modern.

   b) The natural endowment (environment) is the only factor that determines the extent to which a country is traditional or modern.

   c) The natural endowment (environment) is a minor factor that only partly accounts for the extent to which a country is traditional or modern.

7. There are a large number of countries or areas within countries that have always been and still are traditional. In some instances these countries or areas may have pockets where a more modern, interconnected society exists. Most of the world north of 60 degrees latitude is traditional. The following areas also are characterized by societies which are largely traditional: the Amazon basin in South America, the central portion of Australia and North Africa, and many areas of Central Africa.

   These areas are typified as either "very limited environmental work," or "continuous high environmental work." Examine the climate, vegetation, population distribution, soils, and agricultural production maps, and fill in the following chart. Finally, use the information from the chart to answer question eight.

   Complete the chart on the next page by supplying the required information about climate, vegetation, soil, population distribution, and agricultural production for the areas described in columns A and B of the chart.

7. (continued)

Environmental Factors	A Very Limited Work Environment, e.g., areas north of 60 degrees N. latitude, central North Africa, central portion of Australia	B Continuous High Work Environment, e.g., Congo basin, Amazon basin, the islands and peninsulas of Southeast Asia
Climate a) Summer temperature range		
b) Winter temperature range		
c) Summer precipitation range		
d) Winter precipitation range		
e) Typical climate types		
Vegetation f) Types of vegetation		
Soil g) Types of soil		
Population Distribution h) Typical distribution		
i) Are there any centers of higher population density?		
Agricultural Production j) Types of crops produced		

8. List the characteristics of each of the following environmental work areas. To what extent does each determine whether an area is likely to be modern or traditional?

   a) Continuous high environmental work area:

   b) Very limited environmental work area:

   c) Seasonal environmental work area:

9. Identify the environmental work of each of the following places and support your answer by indicating whether your decision is based on temperature, precipitation, or both.

a) Baja California

b) Cuba

c) West coast of Israel

d) Southern two-thirds of Italy

e) Southern Canada, east of Alberta

PRACTICAL EXERCISES KEY

1. Culture: "the integrated pattern of human behavior that includes thought, speech, action, and artifacts depends upon man's capacity for learning and transmitting knowledge to succeeding generations: the customary beliefs, social forms, and material traits of a racial, religious, or social group."*

   Basically, anything that is invented or is influenced by man belongs in the realm of culture. You should have noticed that of the two lists, the culture list contained examples of man-invented or man-influenced phenomena. The noncultural list represents examples largely untouched by man.

   Careful analysis of some of the examples in the noncultural list would reveal the following:

   a) Water resources: man influences these resources by introducing pollutants to the water system

   b) Natural vegetation: in very few places does the vegetation of today represent the virgin natural vegetation before man tampered with the environment

   c) Native animal forms: many animals no longer exist and many more are on the brink of extinction due to man's use of insecticides, pesticides, and mass hunting

   d) Climate: local climates, such as those around large cities, are influenced by pollutants such as smoke and heat exhaust and by the unnatural concentration of concrete and asphalt

   The above analysis is not exhaustive, but it does make clear the idea that the natural environment (i.e., supposedly noncultural phenomena) has, to some extent, become influenced by culture.

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*Webster's New Collegiate Dictionary, 1973.

2.

a)	Portrait	NE
b)	Political	CUL
	(1) Comparative land areas	CUL
	(2) Comparative populations	CUL
c)	Physical	NE
d)	Landforms	NE
e)	Climatic regions	NE
f)	Temperature	NE
g)	Precipitation	NE
h)	Natural vegetation	NE
i)	Great soil groups	NE
j)	Population distribution	NECUL
k)	Population density	NECUL
	(1) Rural/urban population ratios	CUL
l)	Birth rate/death rate	CUL
m)	Population increase/urbanization	CUL
n)	Gross national product	CUL
o)	Literacy	CUL
p)	Languages	CUL
q)	Religions	CUL
r)	Predominant economics	CUL
	(1) Occupational structure of selected areas	CUL
s)	Major agricultural regions	NECUL
t)	Wheat production	CUL
	(1) Wheat trade	CUL
u)	Utilization of grapes	CUL
v)	Cattle-world total	CUL
w)	Wool production	CUL
x)	Forest regions	NE
	(1) Wood production	CUL
y)	Copper reserves	NE
	(1) Refined copper consumption	CUL
z)	Major overseas movement of iron ore	CUL

aa)	Mineral fertilizers	CUL
bb)	Developed water power	CUL
cc)	Potential water power	NE
dd)	Fuel and power consumption	CUL
ee)	Energy consumption	CUL
ff)	Ocean transportation	CUL
gg)	Surface transportation	
	(1) Inland waterways	NE
	(2) Cars and trucks	CUL

3.

a) Mineral resources: large countries, because of their great land area, can be expected to have similar mineral resources.

b) The humid mesothermal climate (Caf) is associated with the growth of forests. Several different kinds of forests are found in this climate.

c) Which country has the greater winter precipitation in its eastern half?

d) Which country shows a greater increase of summer rainfall over its own winter precipitation in its eastern half?

e) At the national scale, population distribution varies in density with the distribution of rainfall. That is, up to a point, there is greater population where there is greater rainfall, and less where there is scanty rainfall. To which country does this relationship apply?

CO	USO	CUS	CM	USM
				X
		X		
				X
			X	
		X		

f) Which country has the greater proportion of arid areas?

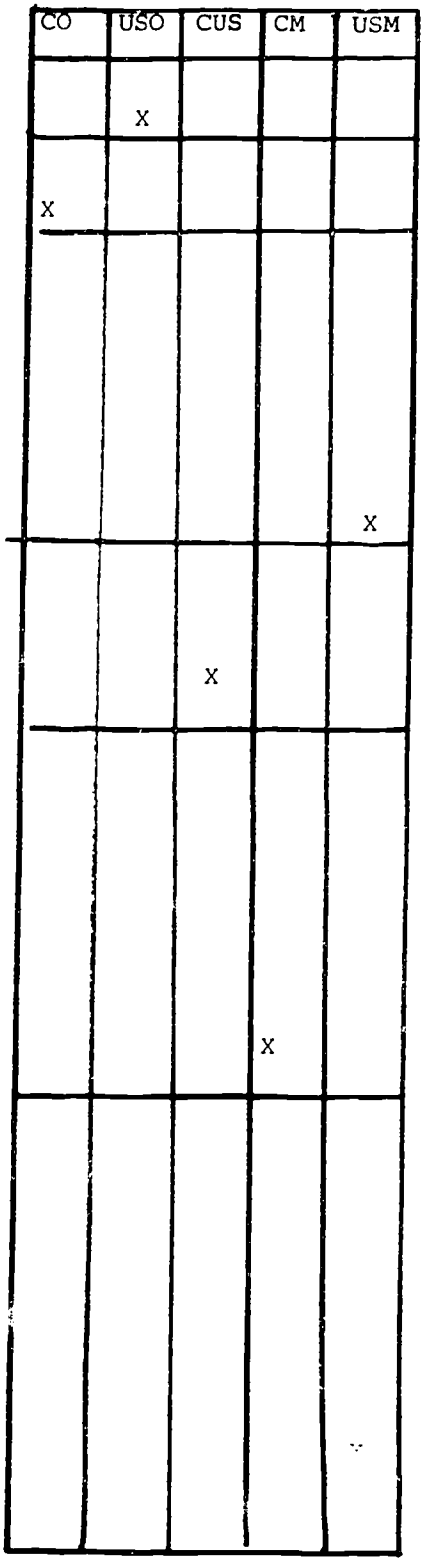
g) Which country has the least commercial wood production?

h) Total natural resources may be comparable on the average between large areas of equal size; but, for any single type of resource, there is usually great variability in its quantity. To which country does this apply in terms of copper reserves?

i) Based on the bar graph of iron ore reserves, which country has the greatest supply?

j) Water power potential is dependent upon heavy precipitation, large watersheds, and rugged terrain. A nation with this combination of factors combined with a large land area will rate high in potential water power. Which country has the greater water power potential?

k) Coal reserves were formed in areas of former inland seas where forests died and were covered with layers of sediment. The northern hemisphere has benefitted most from this resource. Which of the two nations has the greater coal reserves? Consider the coal reserves bar graph for your answer.



l) Which of the two countries has the greater proven petroleum reserves?

m) Natural gas reserves are associated in some places with proven petroleum reserves. Which country has the greater gas reserves?

n) Very few climates have average annual water surpluses; but the Caf climate (humid mesothermal climate) of southeastern U.S. and China have annual water surpluses. Which nation has greater water surpluses for this climate?

CO	USO	CUS	CM	USM
		X		
				X
			X	

4.

Environmental Factor	Parallel	United States	China
Climate	40°	Caf; Daf; BSk; ighlands; BWh: BSk; Highlands; CS; Cb	Daw; BSK; BWK
	35°	Caf; BSk; BWh; Cs	Caf; Highlands
Vegetation	40°	M; D; G; E; Bzi; E; G; M	M; D; Gp; b
	30°	E; G; D; GDsp	D; M; SE; Gp; b
Soil	40°	5; 18; 8; 9; 11; 21	18; 5; 19; 11; 20
	30°	6; 1; 10	21; 1; 18; 17; 19

5.

Natural Endowments	Comparison		
	Identical	Similar	Different
Climate		X	
Mineral Resources			X
Virgin Forests		X	
Potential Water Power			X
Landforms		X	

6. The following statement seems to be valid:

c) The natural endowment (environment) is a <u>minor factor</u> that only partly accounts for the extent to which a country is traditional or modern.

It does not appear that the differences due to the natural environment are major. While there are differences between the two countries, in many cases there are also compensatory conditions. That is, while the United States may have greater coal reserves, China has greater water power potential. Question four uncovered a great similarity between the two countries. It appears, then, that the natural environment plays only a minor role in determining the extent to which a country is traditional or modern.

7.

Environmental Factors	A Very Limited Work Environment - e.g., areas north of 60 degrees N. latitude, central North Africa, central portion of Australia	B Continuous High Work Environment - e.g., Congo basin, Amazon basin, the islands and peninsulas of Southeast Asia
Climate		
a) Summer temperature range	30° - 50°; or over 90°	70° - 90°
b) Winter temperature range	30° - 50°; or over 90°	70° - 90°
c) Summer precipitation range	under 5 - 10 inches	over 40 inches
d) Winter precipitation range	under 5 - 10 inches	over 40 inches
e) Typical climate types	Subarctic, Tundra and Desert	Tropical rain forest
Vegetation		
f) Types of vegetation	Steppe, Desert Taiga; Tundra; Bsp; Gp; b	B (Broad leaf evergreen trees
Soil		
g) Types of soil	Tundra, Podzol, Red Desert Gray Desert	Latosolic soil of continuously humid tropics, and alluvial
Population Distribution		
h) Typical distribution	0 - 2	0 - 2, 0 - 250
i) Are there any centers of higher population density?	Yes	Yes

Environmental Factors	A	B
	Very Limited Work Environment, e.g., areas north of 60 degrees N. latitude, central North Africa, central portion of Australia	Continuous High Work Environment, e.g., Congo basin, Amazon basin, the islands and peninsulas of Southeast Asia
Agricultural Production j) Types of crops produced	Nonagricultural, nomadic herding, barley, dates	Shifting cultivation; rice, plantation coffee, cacao, millet and sorghum, rubber, bananas, cotton

8. a) Continuous high environmental work area:

These areas are characterized by continuous high temperature and precipitation. Biotic and chemical work is high--too high for most types of agriculture.

b) Very limited environmental work area:

These areas experience either continuous high temperatures and little or no precipitation or continuous low temperatures and little precipitation. The former is characteristic of desert areas and the latter is characteristic of Arctic and subarctic areas. In neither area is agriculture feasible.

c) Seasonal environmental work area:

Seasonal fluctuations of temperature and precipitation are characteristic of these areas. It is in these areas that agriculture is most efficient and usually where the greatest population densities are found.

9. a) Baja California: Very limited environmental work area. Baja California has extremely limited precipitation, and continuous high temperatures. Agriculture is difficult and usually impossible in such an area.

   b) Cuba: Continuous high environmental work area. Cuba is characterized by continuous high temperature and precipitation. Agriculture is possible; however, the variety of crops is limited.

   c) West coast of Israel: Seasonal environmental work area: like all Mediterranean climates, temperatures and precipitation fluctuate from summer to winter. Without irrigation the types of crops that can be grown would be limited. Irrigation provides the possibility for a wider variety of crops and a more abundant harvest.

   d) Southern two-thirds of Italy: Seasonal environmental work area. This climate is identical to that of the west coast of Israel.

   e) Southern Canada (east of Alberta): Seasonal environmental work area. This area of Canada experiences cold winters and warm summers; winter and summer precipitation varies (i.e., there is less in the prairie provinces and more in the eastern provinces). This type of climate is amenable to a wide variety of crops

NOTE: Obviously, the natural environment influences the distribution of human settlement. Settlement is mostly excluded from areas that are too cold, hot, dry, or mountainous, or whose soils will not support agriculture. Areas that have a sizeable permanent population have the following characteristics: a) a climate which supports agriculture; b) plains rather than mountains; c) soils that permit at least moderately productive agriculture.

Within the well settled areas, man has a range of choice of what to grow and raise. These choices are cultural rather than environmental.

SELF-DIAGNOSTIC TEST

1. Identify the examples that represent predominantly cultural phenomena by placing a CUL in the space provided. Place an "X" beside those that are predominantly noncultural.

_____a) A wedding
_____b) River systems
_____c) The availability of well water
_____d) Lumbering
_____e) Fuel reserves
_____f) Mining
_____g) Population distribution
_____h) Potential water power
_____i) Water power that is converted into electricity
_____j) Honey used for human consumption
_____k) Wildlife

2. Which statement is the best general definition of "culture"?

a) Any natural resource that is used by man constitutes man's culture.
b) Those nonmaterial things, such as language and religion, that are invented by man constitute man's culture.
c) Anything that is altered, produced, or invented by man falls in the realm of culture.
d) Culture refers to things such as art and music.
e) The technological sophistication of a society constitutes its culture.

3. Which statements correctly describe the role of the natural environment in determining the extent to which a place is modern or traditional?

a) The natural environment is the sole determinant of modernity or traditionalism.
b) The natural environment plays no part of this determination.
c) Where the environment is extremely harsh, it is likely to exclude all dense settlement, both modern and traditional.
d) Where the environment is generous, it plays a smaller role in determining the extent to which a place is traditional or modern.
e) The natural environment plays an important role only in seasonal environmental work areas.
f) c and d
g) c and e
h) d and e

4. Select the statement that correctly describes the advantages of the seasonal environmental work area.

   a) This area has an unchanging pleasant climate highly suitable for agriculture.
   b) The dormant stage facilitates the storage of perishables.
   c) There is less competition for nutrients between plants and other organisms.
   d) Work can be sequenced.
   e) a, c, and d
   f) b, c, and d

5. Use your atlas (specifically pages 10-15) to determine the environmental work type of each of the following areas.

   a) South Africa (Southeast coast only)_____

   _____

   b) Japan_____

   c) Borneo_____

   d) Brazil (excluding the Amazon basin)_____

   _____

   e) Congo basin_____

   f) Kalahari Desert_____

   g) Saudi Arabia_____

SELF-DIAGNOSTIC TEST KEY

1.
CUL	a)	A wedding
X	b)	River systems
X	c)	The availability of well water
CUL	d)	Lumbering
X	e)	Fuel reserves
CUL	f)	Mining
CUL	g)	Population distribution
X	h)	Potential water power
CUL	i)	Water power that is converted into electricity
CUL	j)	Honey used for human consumption
X	k)	Wildlife

2. c

3. f

4. f

5. a) South Africa (Southeast coast only): seasonal environmental work

   b) Japan seasonal environmental work

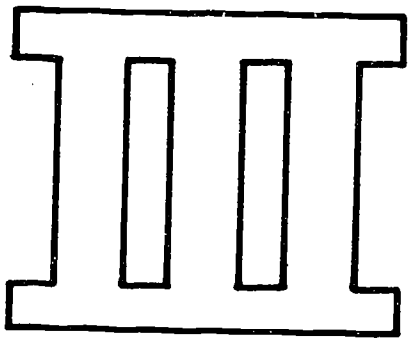
   c) Borneo continuous high environmental work

   d) Brazil (excluding the Amazon basin): seasonal environmental work

   e) Congo basin continuous high environmental work

   f) Kalahari Desert very limited environmental work

   g) Saudi Arabia very limited environmental work



Cultural Indicators Of The Modern And Traditional Worlds

PERFORMANCE OBJECTIVES

1. State the four major categories of culture, and from a list select the correct description and/or examples of each category.

2. Given a number of statements, select those that describe the advantages of culture.

3. Given a list of cultural traits, select those that are characteristic of a modern society and those that are characteristic of a traditional society.

4. Given a number of unknown countries and indicators of their cultural traits, determine which of those countries are modern, which are traditional, and which are transitional.

5. Given a number of generalizations concerning cultural indicators, select those that are most apt to be characteristic of modern, transitional, and traditional societies.

6. Given appropriate data, select from a number of statements the one which correctly describes the application of the Malthusian principle to a specified area of the world.

INTRODUCTION

The natural environment is a factor which can impede or facilitate a place's progress. In unit two you saw that the natural environment is not in all cases the major determinant of the extent to which a country is modern or traditional, although it is reasonable to expect that the natural environment will be a major determinant in areas of particularly harsh conditions (e.g., a severe climate, absence of natural resources, isolation, etc.). In most areas, however, natural environment is only a contributing factor.

What is left? A place can be described in terms of its natural environment and in terms of its inhabitants. The ways in which society uses its natural environment is a partial description of its culture. To what extent does culture determine how effectively an individual uses the environment to enhance his or her own well-being? It is to this question and to other questions related to culture that we turn in this unit.

No attempt will be made to predict that modernity exists only in the presence of one set of cultural traits or that traditionalism exists only in the presence of another set of traits. The best we can do is to describe some of the cultural factors characteristic of modern, transitional, and traditional societies. You should not expect to learn of a cause and effect relationship between culture and modernity or traditionalism; you may find that certain traits occur more often in one type of society rather than in another, but such an occurrence is <u>not</u> necessarily an indicator of cause and effect.

STUDY DIRECTORY

Objectives	Textbook Readings	Practical Exercises	Self-Diagnostic Test Items
1	Chapter 4 Pages 64-73	1	1
2	Chapter 4 Pages 66-72	2	2
3	---	3	3
4	---	4	4
5	---	5	5
6	Chapter 4 Pages 86-87	6	6

PRACTICAL EXERCISES

1. All cultures are identical in the sense that they contain the same general categories of elements. All cultures are different in the sense that the characteristics of each element differ from culture to culture. In figure 3.1 are a number of elements that make up many cultures. These elements can be placed in four groups which constitute the four categories into which elements can be classified.

   In figure 3.2 are four columns labeled A, B, C, and D. Complete these columns by:

   a) Examining the elements in figure 3.1 and deciding which ones seem to go together
   b) Grouping the elements that seem to go together (i.e., those that can be classified under one category) in each of the four columns

painting...Turkish...automation...education...Judaism...mores...

steel production...the family...English...Protestantism...

music...energy sources...Ukrainian...organized medical care...

French...Moslem...poor groups...ethics...production capacity...

Bhojpuri...wood block carving...mechanization...social welfare...

Roman Catholicism...Telugu...political organization...wheat

production...Islam...production methods...Bengali...agricultural

production methods...customs...energy consumption

Fig. 3.1. Cultural elements

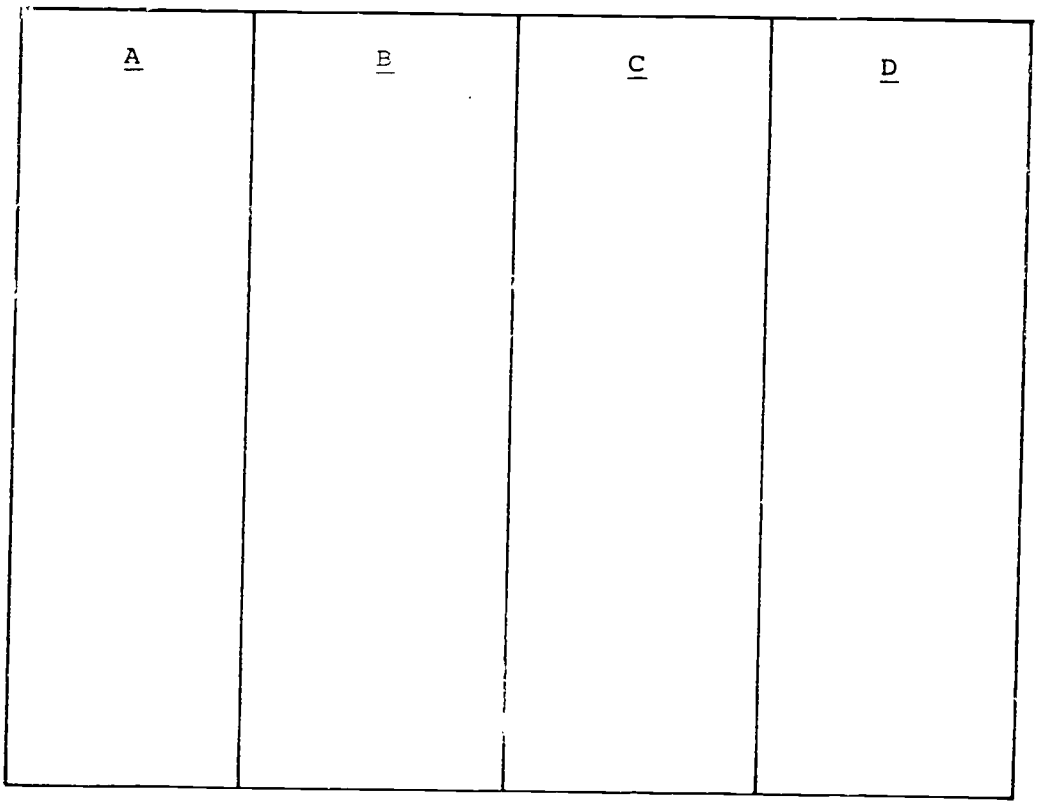


Fig. 3.2. Classification of elements which make up a culture

2. Exercise one should have clarified the concept of culture; however, the importance of culture to a society may not have been apparent. Nor was the importance of culture to young children made apparent. Because individuals are always surrounded by its influences and characteristics, they tend to take their culture for granted. It is for similar reasons that individuals take other cultures for granted. Examine the products in any store, the art in any art gallery, the types of music available in any music shop, the various houses of worship in your town, and you will find that American society is influenced by many other cultures.

   The profound influence and importance of culture goes beyond these superficial artifacts. Read the following article which describes two children who lived in the forest among the animals. The story is true and is not an isolated incident. It is critical to note that these children's formative years were spent in an environment that had no culture as we know it. Basically, the children in the story never underwent the process called acculturation.

When you finish reading, answer the questions which follow the story. It might be helpful if you review the questions before reading the story.*

In his book Wolf Child and Human Child, Arnold Gesell gives a striking account, based on the original source material, of the misfortunes of Amala and Kamala, the two best known cases of zoanthropy.

On 9 October 1920 the Reverend Singh, who was preaching in the area, was told by the villagers of Godamuri that there were 'fantastic people' living in the forest. He was taken to the place under cover of dusk and saw some wolves emerging from their lair. There were three adults, two cubs and two 'monsters', one much smaller than the other, whose faces were hidden by their tangled hair and who were walking on all fours. Both of them behaved exactly like the wolves. As they came out of their cave, they put their heads out first and looked around before leaping out. Singh only just managed to prevent one of his guides from shooting and because they were all so terrified by the 'monsters', he went to another village several miles away to recruit volunteers who had not yet heard of these strange creatures. When his party returned to the place a week later, two of the elder wolves fled, but the third, a she-wolf, stayed guarding the entrance to the cave, and was riddled with arrows. At the back of the cave they found two cubs and two children huddled together, the latter cowering in defence, the former ready to attack. The two Mowglis were entrusted to the villagers for a week but as soon as Singh left, they ran away from the children and on his return he found them abandoned in their enclosure almost dead from starvation. They were forced to drink milk and generally attended to, and after a few days Singh took them in an ox-cart to the orphanage which he ran in Midnapore, arriving there on 4 November 1920.

The younger one was given the name of Amala and the older one Kamala. Kamala had large shoulders, long arms and her spine was quite straight. With both of them, the skin on their hands, knees and elbows was heavily calloused. Their tongues hung

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*Wolf Children, (New York: Monthly Review Press, 1972), pp. 68-71.

out through thick red lips, they panted and frequently bared their teeth. They suffered from photophobia and day-blindness, and spent their days crouched in the shade or standing motionless with their faces to the wall. They livened up at night, howling and groaning and hoping to escape. Amala—aged one and a half—and Kamala—aged eight and a half—slept only about four hours in twenty-four. They had two means of getting about: on their knees and elbows for short distances and on their hands and feet for longer distances or for running. They lapped up liquids and took their food in a crouching position. Their exclusive taste for meat led them to indulge in the only activity of which they were capable: chasing chickens or rooting around for carcasses and entrails. Though they took a slight interest in dogs and cats, they were completely unsociable and used to snarl at humans, showing particular hostility to Singh's wife. When anyone approached, they used to arch their backs menacingly and shake their heads rapidly back and forwards to show their wariness.

Amala died on 21 September 1921 from nephritis and generalized oedema after an illness which had lasted three weeks, and curiously enough Kamala died of the same disease eight years later on 14 November 1929. The Reverend Singh and Dr Sarbadhicari kept a careful record of Kamala's psychological development throughout her stay at the orphanage. Singh's journal shows that her movements became slowly more human and that after ten months she was able to reach out her hand to take food. By February 1922 she was able to kneel and by March she could walk on her knees. In May she got to her feet leaning against a bench and the next summer stood up by herself for the first time. She had learnt to walk by January 1926 and for the remaining two years of her life, though her walk remained somewhat wolf-like, she showed quite clearly that her previous way of walking had been due merely to the absence of ordinary human training. Kamala's behavior became year by year more relaxed and more varied. Endlessly repeated motor gestures, like pulling on the rope of a punkah for hours at a time, slowly gave way to actions of a social nature such as using a glass to drink from, chasing the crows which were eating grain in the farmyard, washing and bathing in front of the Singhs, looking after the smaller children at the orphanage and telling the nurses when they were crying, collecting eggs from the henhouse and many other simple tasks.

At the same time, her character was changing, though her sister Amala's death caused a temporary regression. She cried for the first time, refused all food or drink for two days, sat crouched in the corner for a week, and continued sniffing around for her companion's scent for a further four days. After three terms at the orphanage she became more confident and would take biscuits from Mrs Singh and even approach her at milk-time. Exactly as Itard had done, Mrs Singh began to massage the child's muscles in order to loosen them and unstiffen her joints. One day in November 1921 she took Mrs Singh's hand and showed by gestures that she wanted to be stroked. During the same month she sat down beside two kid goats, hugged them, and spoke to them in some incomprehensible language of her own. It was three years before she began to show fear of the dark and to want to sleep near the other children. She worried whenever Mrs Singh was not with her and would wander around the garden, greeting her return by leaping for joy and rushing to meet her. Over a period of five years, her sense of taste became gradually more discriminating and her emotional responses in general less crude. She developed a liking for salt and by 1926 had given up eating carrion. She avoided dogs, cried when the other children went to market without her and was impatient for her turn on the swing. She enjoyed compliments of any sort and showed her modesty by refusing to leave the dormitory without her dress on.

Kamala's intelligence also slowly improved. To begin with she knew only two words: 'ma' for 'mama', meaning Mrs Singh, and 'bhoc' which she used as an expression of hunger or thirst. By 1923 she could signal 'yes' or 'no' by nodding her head and say 'yes' ('hoo') in words. In 1924 she asked for rice with the word 'bha' and showed her will for the first time by using the words 'am jab' (I want). By 1926 Kamala could recognize her own cup and plate and was capable of carrying on a rudimentary conversation with a vocabulary of about three dozen words. She could understand verbal instructions and whenever she did not know a word she used sign language instead. Towards the end of her life in 1929 she had acquired the use of about fifty words and was able to talk quite easily with the doctors who looked after her, and call them by name. Paul Sivadon is correct in pointing out that there is no evidence at all that Kamala's backwardness was the consequence of some innate defect. A comparison of her mental faculties as they were when she was eight years old with her faculties at the end of her

life shows that her pitiable condition was due only to the lack of a proper family so early in life. In citing the story of Kamala, Sivadon reminds one that 'organic defects and psychological problems cannot be separated' and he concludes:

> Man differs from animals in that he is born prematurely. His personality develops within a system of cultural matrices which are as important as the maternal matrix. They consist of emotional ties which are built up during the first two years of life with the mother and which affect the child's whole emotional life. Learning to speak at the correct time similarly makes all the difference to the child's intellectual life. This means that a child which is perfectly normal at birth can develop into an idiot if his education is unfavourable enough. It is extremely important to grasp this. The personality develops in exact proportion as the educative value of the environment offers the correct cultural support at the right moment.

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a) This first question will require that you do some research in your local library. You should look under such card catalog headings as "acculturation," "culture-symbolic thought," language (as it relates to culture). Any introductory anthropology textbook will contain sections dealing with these topics.

It might be said that since Amala and Kamala had developed a way of coping with their environment, they had a culture. If one accepts that argument one must also accept the assertion that animals have a culture. One of the major components of culture is the existence of symbolic thought. What is symbolic thought? What advantages does it give man that in its absence becomes a disadvantage for animals?

b) Based on your research for question two, part a, you should be able to derive the answer for this question. What is acculturation? Why is this process so important in order for any culture to maintain its integrity? What is the relationship between symbolic thought and acculturation?

3. Below you will find a number of cultural indicators that reflect the extent to which a country or society is modern, traditional, or transitional. (These indicators, plus a number of others, will be used in the next exercise.) Answer the question for each indicator in the space provided.

a) Population Growth

Would you say that a rapid or very slow (or zero) population growth is an indicator of a modern society? Why? What are some of the causes of a higher population growth in one society as opposed to another?

b) Infant Mortality

Low infant mortality is an indicator of the modern society. What are the characteristics of the modern world that contribute to low infant mortality rate?

c) Youthfulness of Population

Because of efficient medical care, modern societies tended in the past to have youthful populations (i.e., a greater proportion of the population is in the age range below fourteen years). Infant mortality rate tended to be low and the expected life span was considerably greater than in traditional societies. It should be noted that this trend--i.e., a youthful population--has reversed itself in most modern societies. Birth rates have decreased while people continue to live longer. What is the implication for the working person's monetary contributions to social security (at least in the U.S.) of this reversal in the youthfulness of the populacion?

d) Urban Population

The population of modern cultures tends to be concentrated in large cities. Why is this a characteristic of modern societies but not of traditional societies?

e) Cultivated Land (hectares per capita per agricultural population)

(One hectare is approximately 2.47 acres.) This particular indicator reveals the number of hectares under cultivation per person employed in the agricultural area. Why is it that there are more cultivated hectares per capita per agricultural population in the modern world than in the traditional world?

f) Energy Generation and Consumption

The modern world consistently produces, generates, and consumes more energy than the traditional world. Why is this the case?

g) Transportation

Railway density, intensity of rail use, road density and motor vehicle density are some of the indicators of transportation. Modern societies characteristically have more and better means of transportation than traditional societies. Why is efficient transportation so necessary in the modern world?

h) Interconnectedness

The characteristic of the modern world is measured by such indicators as international mail flow, international transportation, and trade. Why does the modern world find it necessary to maintain interconnections with many other areas of the world?

Education and Literacy

Indicators of education level and literacy consistently correlate positively with modern societies (i.e., if a society is modern, its population tends to be well educated and literate). Why must a modern society maintain a population that is educated and literate?

j) Gross National Product

What is the meaning of "gross national product" (a dictionary might help)? Why is a higher GNP characteristic of the modern world?

4. The purpose of this exercise is to provide you with a method to quantify the various cultural factors that reflect the extent to which a country is modern, traditional, or transitional. This is a fairly lengthy exercise; therefore, you should follow the directions very carefully and return to them as often as necessary.

Directions:

a) On the next few pages you will find raw data for seven countries. Each group of data constitutes one cultural indicator. Each country is identified with a letter only.

b) Your first task is to calculate the relative standing (rank) of each country for each of the indicators. For example, for the indicator "Food supply" country "A" ranks first. Place this result in the "rank" column.

c) Each indicator for a country that ranks "1" or "2" constitutes a modernizing trend for that country. A rank of "3," "4," or "5" is transitional, and a rank of "6" or "7" is traditional. Determine, for each country, the number of indicators that fall into the modern, transitional, and traditional slots.

d) Complete the graph in figure 3.26 on page 102 (instructions accompany the graph).

*Except where otherwise indicated, data is based on 1954-1960 Census.

Country	Indicator Population Growth (Annual Rate, 1953-57)	Rank (Rank lowest first)
A	2.8%	
B	.8	
C	2.4	
D	2.7	
E	.8	
F	1.9	
G	1.4	

Fig. 3.3. Population growth

Country	Indicator Infant Mortality (Deaths per 1,000 live births)	Rank (Rank lowest first)
A	31.3	
B	38.6	
C	170.0	
D	112.8	
E	56.3	
F	82.5	
G	100.9	

Fig. 3.4. Infant mortality

Country	Indicator Youthfulness of Population Proportion in Age Group 5-14	Rank (Rank lowest first)
A	19.5%	
B	15.3	
	25.7	
D	28.8	
E	17.0	
F	25.2	
G	(no data available)	

Fig. 3.5. Youthfulness of population

Country	Indicator Urban Population (Percent of population in cities of 20,000 or more)	Rank (Rank highest first)
A	35.1%	
B	29.8	
C	20.2	
D	17.8	
E	39.8	
F	10.5	
G	8.0	

Fig. 3.6. Urban population

Country	Indicator Food Supply (Calories per capita per day)	Rank (Rank highest first)
A	3070 calories	
B	2920	
C	2585	
D	2020	
E	2760	
F	2250	
G	2125	

Fig. 3.7. Food supply

Country	Indicator Cultivated Land (hectares* per capita per agricultural population)	Rank (Rank highest first)
A	56.1	
B	4.2	
C	1.9	
D	1.5	
E	3.9	
F	4.0	
G	1.5	

Fig. 3.8. Cultivated land (hectares per capita per agricultural population)

*Hectare = 2.47 acres

Country	Indicator Cultivated Land (hectares per capita)	Rank (Rank highest first)
A	2.43	
B	0.49	
C	0.33	
D	0.43	
E	0.68	
F	0.66	
G	0.24	

Fig. 3.9. Cultivated land (hectares per capita)

Country	Indicator Consumption of Commercial Fertilizer (Kilograms per hectare of cultivated land)	Rank (Rank highest first)
A	6.7	
B	75.0	
C	4.6	
D	2.8	
E	26.0	
F	0.1	
G	0.4	

Fig. 3.10. Consumption of commercial fertilizer

Country	Indicator Electricity Generation (Kilowatt hours per capita)	Rank (Rank highest first)
A	5,305	
B	1,144	
C	228	
D	66	
E	409	
F	8	
G	7	

Fig. 3.11. Electricity generation

Country	Indicator Commercial Energy Consumption (Amount of rate of change per capita, 1937-54)	Rank (Rank highest first)
A	2.59	
B	0.64	
C	3.47	
D	14.71	
E	5.59	
F	2.92	
G	0.50	

Fig. 3.12. Commercial energy consumption (rate of change per capita)

Country	Indicator Commercial Energy Consumption (Megawatt hours per capita)	Rank (Rank highest first)
A	60.6	
B	19.5	
C	2.9	
D	1.1	
E	6.4	
F	0.3	
G	0.6	

Fig. 3.13. Commercial energy consumption (megawatt hours per capita)

Country	Indicator Consumption of Steel (Metric Tons per 1,000 population)	Rank (Rank highest first)
A	322	
B	235	
C	25	
D	3.3	
E	50	
F	1.1	
G	3.9	

Fig. 3.14. Consumption of steel

Country	Indicator Railway Density (Kilometers per 100,000 population)	Rank (Rank highest first)
A	606.0	
B	92.0	
C	64.0	
D	30.0	
E	62.0	
F	10.0	
G	14.9	

Fig. 3.15. Railway density

Country	Indicator Intensity of Rail Use (Million Freight tons per kilometer per 100,000 population	Rank (Rank highest first)
A	616.0	
B	108.0	
C	15.4	
D	3.5	
E	26.3	
F	6.3	
G	7.1	

Fig. 3.16. Intensity of rail use

Country	Indicator Road Density (Kilometers per 100,000 population)	Rank (Rank highest first)
A	5,870	
B	1,663	
C	128	
D	74	
E	416	
F	196	
G	68	

Fig. 3.17. Rail density

Country	Indicator Motor Vehicle Density (Motor vehicles per 1,000 population)	Rank (Rank highest first)
A	181.0	
B	111.3	
C	12.0	
D	5.7	
E	7.4	
F	1.0	
G	0.7	

Fig. 3.18. Motor vehicle density

Country	Indicator International Mail Flow (Pieces dispatched per 1,000 population)	Rank (Rank highest first)
A	5.3	
B	7.7	
C	0.5	
D	0.4	
E	1.9	
F	0.3	
G	0.4	

Fig. 3.19. International mail flow

Country	Indicator International Trade Turnover (Imports and Exports in U.S. dollars per capita)	Rank (Rank highest first)
A	58.9	
B	21.9	
C	4.7	
D	4.9	
E	3.7	
F	2.4	
G	0.9	

Fig. 3.20. International turnover

Country	Indicator Trade Dependency on Raw Materials (Raw materials as exports)	Rank (Rank lowest first)
A	54.9%	
B	30.7	
C	96.5	
D	97.8	
E	80.8	
F	98.2	
G	90.5	

Fig. 3.21. Trade dependency on raw materials

Country	Indicator Daily Newspaper Circulation (Per 1,000 population)	Rank (Rank highest first)
A	242.0	
B	246.0	
C	51.0	
D	50.0	
E	85.0	
F	4.5	
G	9.0	

Fig. 3.22. Daily newspaper circulation

Country	Indicator Primary School Enrollment (Percent of children ages 5-14 in primary school)	Rank (Rank highest first)
A	86	
B	78	
C	34	
D	42	
E	47	
F	13	
G	(no data available)	

Fig. 3.23. Primary school enrollment

Country	Indicator Literacy (Percent of adults literate)	Rank (Rank highest first)
A	97-98%	
B	96-97	
C	45-50	
D	55-60	
E	80-85	
F	10-15	
G	15-20	

Fig. 3.24. Literacy

Country	Indicator Gross National Product (U.S. dollars per capita)	Rank (Rank highest first)
A	1,667	
B	1,046	
C	262	
D	202	
E	254	
F	70	
G	56	

Fig. 3.25. Gross national product

4. d) (Continued)

Instructions for completing figure 3.26: "Graph of the modern, transitional, and traditional placement of twenty-three indicators for seven countries."

(1) A country which has a rank of "1" or "2" on an indicator will be considered as being modern for that indicator; one with a rank of "3," "4," or "5" is transitional; and one with a rank of "6" or "7" is traditional.

(2) For each country determine the number of indicators on which the country is ranked "modern," "transitional," or "traditional."

(3) For each country, construct a horizontal bar graph that will show the number of indicators for which the country ranked modern, transitional, or traditional.

(4) Enter your calculations resulting from step "3" onto the graph on the next page. To do this you must blacken in one square in the "modern" column on the graph for each indicator that gives a country a rank of modern. Start at the right side of the "modern" column and work toward the left. Thus, a country which ranks as modern for six indicators would have six squares blackened in the "modern" column. These blackened squares would be found on the right side of the "modern" column. Follow this same procedure for the transitional and traditional columns.

(5) Do not list the countries in alphabetical order. List them so that the country with the greatest number of rankings in the "modern" column comes first. The country with the greatest number of rankings in the "traditional" column would appear last.

(6) Enter all countries on the graph.

(7) The transitional and traditional bars have been completed for country "A." Since country "A" ranked as transitional for three indicators, three squares in the "transitional" column have been blackened. Notice that they start at the right side of the column.

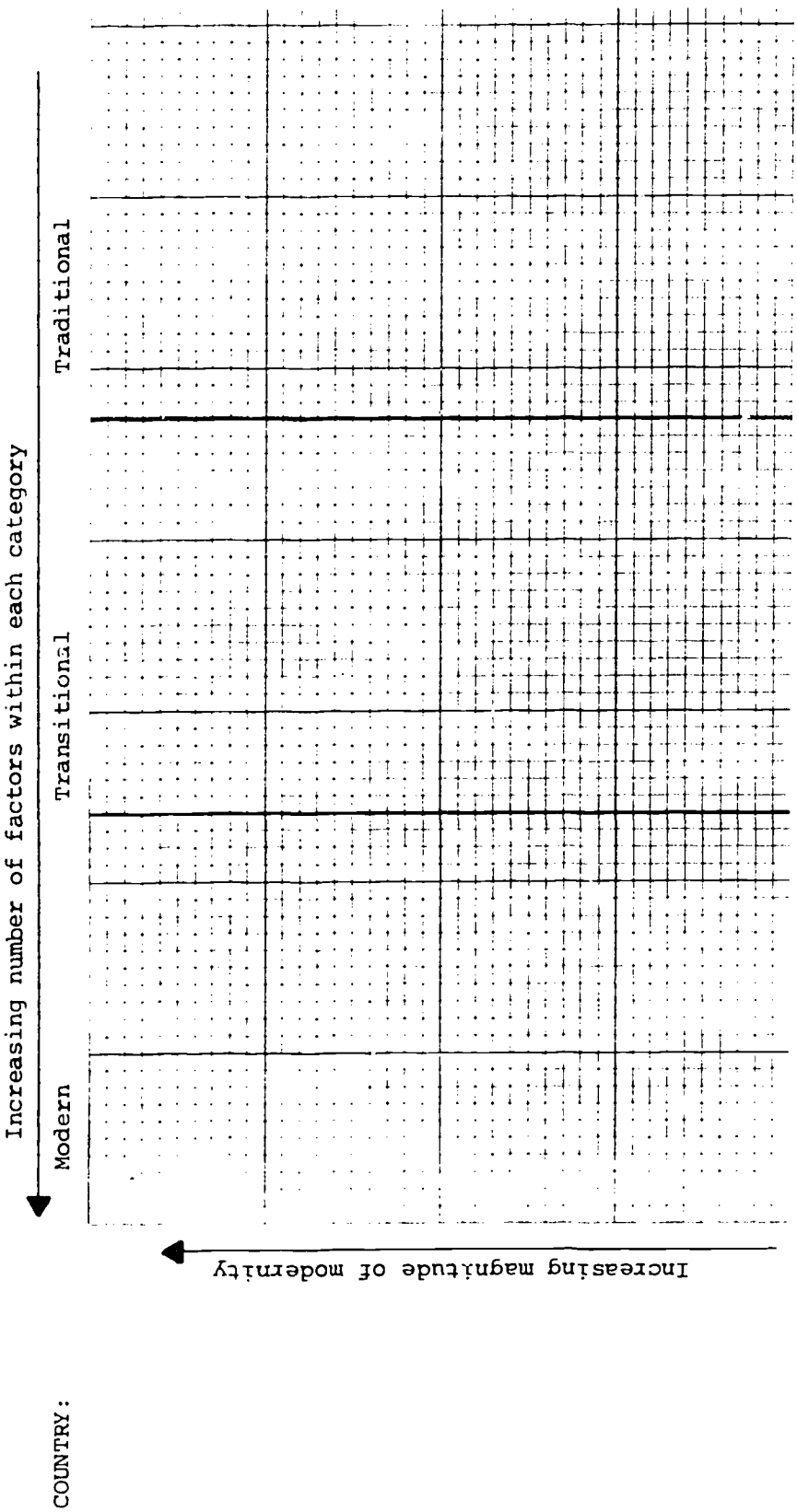

Fig. 3.26. Graph of the modern, transitional and traditional placement of twenty-three indicators of seven countries. (to be completed by the student)

5. The last exercise only partially quantified data relating to cultural indicators. What is needed is a chart which contains a profile of cultural indicators for modern, transitional, and traditional societies. Such a profile would reveal the value of each indicator for each of the three types of societies. A comparison of the profiles of each society will provide a method by which the relationships among indicators within and between societies can be uncovered.

   You are to complete the chart in figure 3.28 on page 105. When you have completed the chart, answer the questions.

   The data utilized for the chart is based on a mid-1950's census and therefore does not accurately reflect the present status of each country. The greatest relative change since the mid-'50's is in population growth: Canada's population growth has declined relative to that of the other two countries. Canada's gross national product has dramatically increased; however, the gap between it and those of the other two countries is about the same today as it was in the mid-'50's.

   The following instructions tell you how to complete the chart in figure 3.28.

   (1) A representation of each society type is to appear on the chart. Canada will represent the modern world; Brazil will represent the transitional; and Pakistan will represent the traditional world.

   (2) Use the statistics provided in the previous exercise to complete the chart in figure 3.28.

   (3) Each line on the chart represents one cultural indicator. The name of that indicator appears at the end of the line. Each line is divided into equal units so that you can record the value of a country's indicator on its line.

   (4) To record the value of an indicator for a country simply find the appropriate line, look back to question four to find the value of the indicator for each of the three countries, and finally, make a mark on the line which would designate the value of the indicator (one mark for each country). You might want to mark the values in the following way:

       1 - Canada
       2 - Brazil
       3 - Pakistan

(5) When the values of all indicators for all three countries have been marked, draw a line (a line of dashes for one country, dots and dashes for another country, and a solid line for the third country) joining all the values for a particular country. You will end up with three lines, one for each type of society, which are profiles of cultural indicators.

(6) One new indicator has been added to the chart. That indicator is "Life Expectancy at Birth" which reflects the average life span, in years, for an individual living in particular areas of the world. The data for the three countries with which you are concerned is given in figure 3.27.

Country	Life Expectancy at Birth
Canada	70.80 years
Brazil	60.70
Pakistan	41.25

Fig. 3.27. Average life span for an individual in particular areas of the world

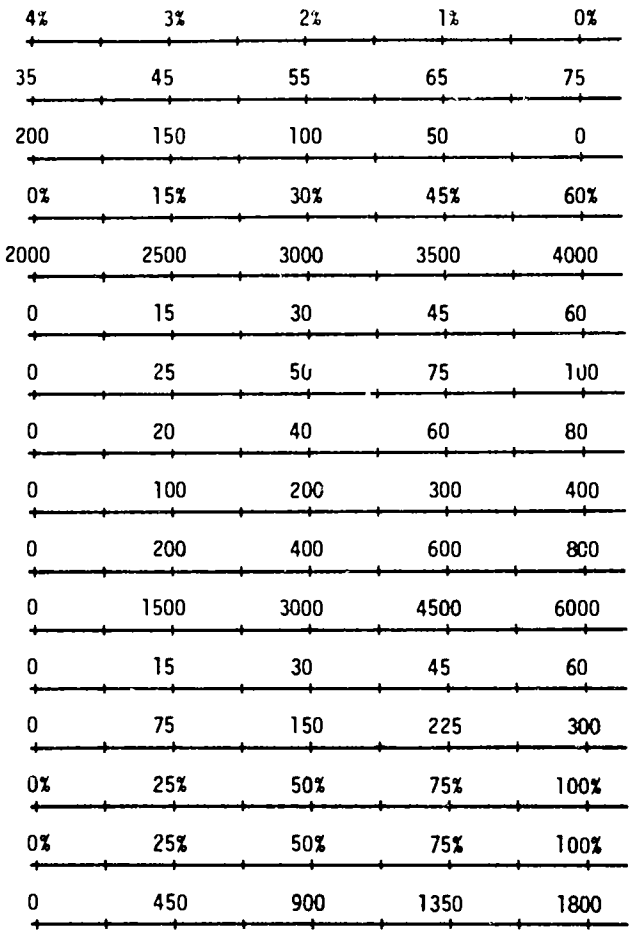

Fig. 3.28. Profile of cultural indicators for modern, transitional, and traditional societies. (To be completed by the student)

5. (Continued)

USE THE GRAPH YOU JUST COMPLETED TO ANSWER QUESTIONS "a" THROUGH "e."

a) "Gross National Product" is probably the best indicator of the degree to which a society is modern. From the graph you constructed, state which factors are likely to contribute to a high GNP.

b) Canada's agricultural population is very low considering the amount of land that is under cultivation. What must be characteristic of a society in order for a small number of individuals to cultivate an inordinately large amount of land?

c) Very few of a modern country's population live in rural areas. A great proportion (a proportion which has increased considerably since the mid-50's) live in the cities. What two categories of employment are available in the cities?

d) Which two of the sixteen factors in the graph are indicators of a society's interconnectedness? That is, which two factors indicate the extent to which a society is aware of, and has relations with, other societies? Which one of these two factors is an indicator of industrialization?

e) A society's standard of living is based on more than just its industrial might. What other factors listed in the graph contribute to a society's high standard of living?

6. The Malthusian principle was based on the premise that "population increased in geometric progression but that agricultural production, the primary support of the population, could increase only in a strict arithmetic progression."*

a) Which of the following are examples of an arithmetic progression and which are examples of a geometric progression?

___ (1) 1, 3, 5, 7

___ (2) 7, 21, 63, 189

___ (3) 100, 150, 200, 250

___ (4) 2, 4, 6, 8

___ (5) 2, 4, 8, 16

___ (6) 50, 125, 200, 275

*Harper and Schmudde, Between Two Worlds: A New Introduction to Geography, p. 86.

b) Which of the following statements is true?

___ (1) With time held constant, something that increases in an arithmetic progression will result in a larger amount than that which increases in a geometric progression

___ (2) With time held constant, something that increases in a geometric progression will result in a larger amount than that which increases in an arithmetic progression

___ (3) With time held constant, there would be no difference between increases in geometric progression or increases in arithmetic progression

c) If food production were to increase in an arithmetic progression and if population were to increase in a geometric progression which would increase faster?

d) To which of the following countries is the Malthusian principle likely to be applicable? Why? (You should refer to the maps on pages 26-27 and the agricultural data in Goode's World Atlas.)

___India

___United States

___Bangladesh

___Japan

___Mexico

___The countries of Central America

PRACTICAL EXERCISES KEY

1. The elements in your lists may be slightly different from the ones included below. If you have trouble deciding whether your lists are valid you should call your tutor.

a Symbolic Forms	b Belief System	c Social Organization	d Technology
Turkish English Ukrainian French Bhojpuri Telugu Bengali Poetry Music	Islam Judaism Moslem Protestantism Roman Catholicism	Education Political organization The Family Peer Groups Social Welfare Organized Medical care Ethics Mores Customs	Steel production Wheat production Mechanization Automation Production methods Energy sources Energy consumption Production capacity Agricultural production methods

Fig. 3.29. Classification of elements of a culture

Culture is usually divided into four categories:

a) Symbolic Forms: This refers to the various ways individuals express themselves. This category includes language (and other symbolic forms of written and oral communication) and the arts.

You might be interested to know the number of people who speak the languages listed: 275 million people speak English, 125 million speak Bengali, 46 million speak Ukrainian, 55 million speak French, 39 million speak Bhojpuri, 55 million speak Telugu, and 34 million speak Turkish. While Mandarin Chinese was not listed, approximately 585 million speak that language.

b) Belief System: ". . . every society . . . develops certain patterns of behaving designed to guard, by one means or another, against the unexpected, and better to control man's relationships to the universe in which he lives. It is this area of culture that we shall call religion.

"Because no people have achieved complete certainty either in interpersonal relations or in technology, religion is inevitably a part of every culture. To be sure, the forms of religious behavior vary enormously from one society to the next; there are almost countless differences in belief, ritual, and other aspects of religious practice."*

c) Social Organization: All cultures tend to set up acceptable ways of organizing their members. All cultures have organized their members in ways that facilitate self-governance, the education of the young, and the care of the elderly, sick, and indigent, and in ways that stipulate certain interpersonal relations (such as title of address: Ms., Mr., Mrs., Professor, Dr., Senator, etc.). Many of these rules are written (laws) and many are unwritten (taboos, ethics, and mores).

There exists in all cultures specified punishment for breaking the law. Few cultures, however, specify how to punish persons who violate a taboo. For example, in many cultures it is not acceptable to belch in public, but in many other cultures, belching after a meal is not only acceptable but is expected as a sign that the meal was enjoyable. Taboos and mores vary from culture to culture, but all cultures have taboos and mores. While physical punishment usually does not result when a taboo is broken, other forms of unofficial punishment, such as ostracism, may be applied.

d) Technology: The degree of sophistication of the methods of production and manufacture is a measure of a culture's technological know-how. Technology is common to all cultures, and what may appear to be "primitive," on closer inspection, may be ingenious. For example, if you lived in the Kalahari desert, how would you store water (assuming the unavailability of methods that are familiar to you)? The Bushmen have solved this problem with great efficiency. They fill an ostrich egg (impermeable) with water and bury it under the sand (to protect it from the heat) thereby retarding evaporation.

*Ralph L. Beals and Harry Hoijer, An Introduction to Anthropology (New York: The Macmillan Company, 1965), p. 567.

2. a) Symbolic thought enables man to do at least two things that animals are unable to do. Man can form ideas which are representations of external events, phenomena, or processes. Man can communicate these ideas very efficiently through the use of language.

Language, or the communication of symbolic thought, makes it possible for learning to occur efficiently. While it is possible to train a human through the use of verbal instructions for even the most complex operations, a very elaborate and time-consuming training program would be required to train animals to accomplish even the simplest of tasks.

b) Acculturation has several meanings. Webster's New Collegiate Dictionary offers this definition: "1: a process of intercultural borrowing between diverse peoples resulting in new and blended patterns, esp: modifications in a primitive culture resulting from contact with an advanced society. 2: the process beginning at infancy by which a human being acquires the culture of his society."* Acculturation, therefore, is simply the process of acquiring a culture. The process by which the acquisition comes about is learning.

Individuals of all ages need to identify with something. This need to identify varies from person to person. The entity with which people identify is generally determined by a person's self-perception, interests, and ambitions. In short a person's affiliation tends to serve his or her needs.

Many social needs (i.e., group affiliations) are formed early in a person's life and are shaped by that person's environment. A person encounters many environments, but the one which is all encompassing is culture. Because the young are so influenced by the environment, they tend to learn about and perceive a need for their surrounding culture.

It is through this process that culture maintains its integrity. Integrity in this sense refers to its relatively unchanging nature. That is, while minor changes do occur, they come about slowly and are not, therefore, traumatic.

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*Webster's Collegiate Dictionary, (Massachusetts: G. & C. Merriam Company, 1973), p. 8.

An infant, as you read in the article, will adopt the behavior pattern it encounters in its environment. The cultural environment provides the infant with a pattern of behaviors, values, ethics, and so on, which the child will adopt. It is doubtful that the infant could exist in the absence of an environment which teaches the infant methods by which he could sustain himself.

Finally, the presence of a cultural environment permits the child to acquire a set of behaviors that will permit her to live successfully among the members of her culture. "All cultures include educational mechanisms, which are both unconsciously applied and purposively directed. The function of these mechanisms is to train the young in the common behavior patterns and understanding that make up much of the culture. Not only must the child be taught the necessary skills and associated knowledge by which he must make a living, he must also be socialized by learning the accepted ways of dealing with his fellows, and he must acquire a working relationship with the universe through understanding the supernatural forces about him . . . ."*

3. a) Population Growth

The population growth of many modern societies has slowed down. Except for certain religious beliefs, a large family is no longer important. In many traditional societies, on the other hand, children mean security in old age. That is, when the adult is old and no longer able to support himself, he turns to his children for food and shelter. Since infant mortality rates are high in these societies, families, in order to be assured of this security, will tend to have many children.

b) Infant Mortality

Sophisticated medical care and a better knowledge of hygienics and child rearing result in a lower rate of infant mortality in modern societies.

*Beals & Hoijer, An Introduction to Anthropology, p. 701.

c) Youthfulness of Population

As the age of the population increases, there will be fewer taxpayers and therefore fewer contributors to social security; that is, a progressively greater non-working proportion of the population will exceed sixty-five years of age. As this trend continues, there will be fewer people available for employment and thus fewer people contributing to social security. This may mean that the total amount of each individual's contribution to the social security system will steadily and perhaps dramatically increase.

d) Urban Population

Industrial complexes and the government bureaucracy tend to be located in large cities and provide many jobs. Most cities, at their inception, were built in strategically located areas--convenient to transportation, close to raw materials, and so on. With the advent of mechanized agriculture many individuals became unemployed and subsequently moved to the cities in search of employment. This motivated old industries to expand and new ones to move into the cities in order to tap this supply of potential employees.

e) Cultivated Land

Modern societies have mechanized their agricultural methods of production. Whereas a large number of people were required to plant and harvest in the past, today, machines can take the place of a majority of these individuals. Consequently, one man utilizing modern machinery can work many acres of land, whereas one man in a traditional society utilizing animate energy sources can only work a very few acres.

f) Energy Generation and Consumption

Industrial and consumer-oriented societies require vast amounts of energy to power industrial complexes and to operate smaller machines and appliances in the home.

g) Transportation

In the modern world transportation is required to move goods and supplies and to provide efficient conveyance for commuters and long distance travelers. Commerce is not a local activity in the modern world, and means for transporting raw materials and finished products are necessary.

h) Interconnectedness

The continued prosperity of the modern world is dependent on the exchange of raw materials, products, and innovations.

i) Education and Literacy

The knowledge required to maintain the complicated technology of the modern world makes it necessary to have a pool of well-educated individuals. Modern societies depend for their prosperity on innovations and advances in many disciplines (medicine, chemistry, physics, humanities and so on).

j) Gross National Product

"The total value of the goods and services produced in a nation during a specified period (as a year)."* GNP is a reflection of a society's level of technology. Modern societies have a sophisticated technological capacity, have a high rate of employment, and produce vast quantities of products. A high GNP also is an indirect measure of other aspects of culture and is a reflection of a society's educational and literacy levels as well as of its efficient social organization. A high GNP requires a social organization that permits free enterprise and competition. (While this latter point may be argued, history has thus far upheld its validity.)

*Webster's New Collegiate Dictionary, (Springfield, Massachusetts: G. & C. Merriam Company, 1973), p. 507.

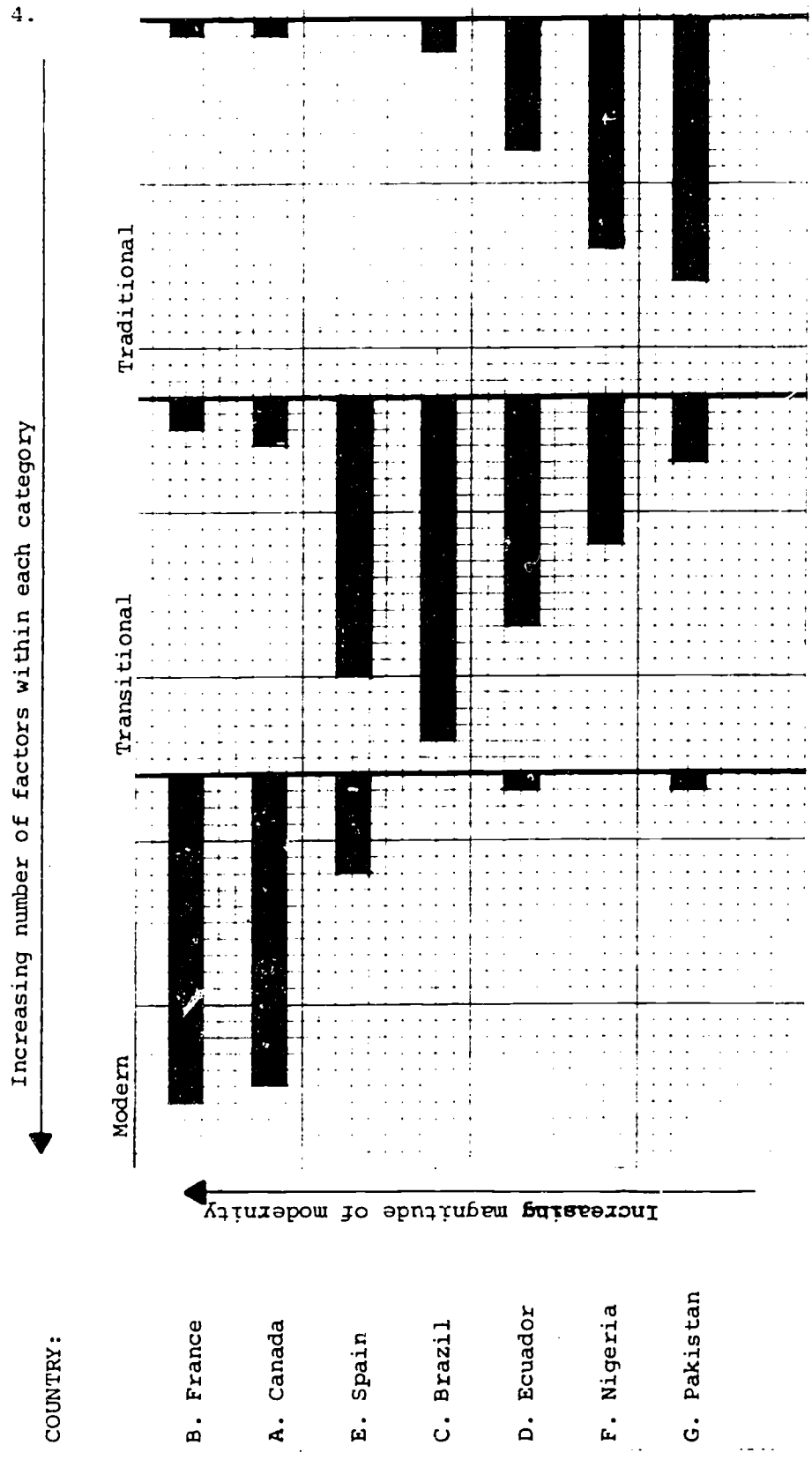


Fig. 3.30. Completed graph of the modern, transitional and traditional placement of seven countries.

5. a) The following are indicators of a high Gross National Product:

(1) Food supply
(2) Commercial energy
(3) Consumption of steel
(4) Intensity of rail use
(5) Cultivated land
(6) Road density
(7) International trade turnover
(8) Literacy, and possibly
(9) Primary school enrollment
(10) Consumption of commercial fertilizer

Note that you were to list those factors which are indicators of high GNP. While a cause and effect relationship may exist between the above factors and GNP, the examination of such a relationship would be beyond the scope of this course.

b) A sophisticated technology is indicated by a society that requires a small percentage of its working force to be employed in agriculture. Modern technology has provided the agricultural community with sophisticated machinery such as combines, tractors, cultivators, etc., that take the place of hundreds of laborers.

6. a) 2, 5

b) 2

c) population

d) India
Bangladesh
Mexico
Central America

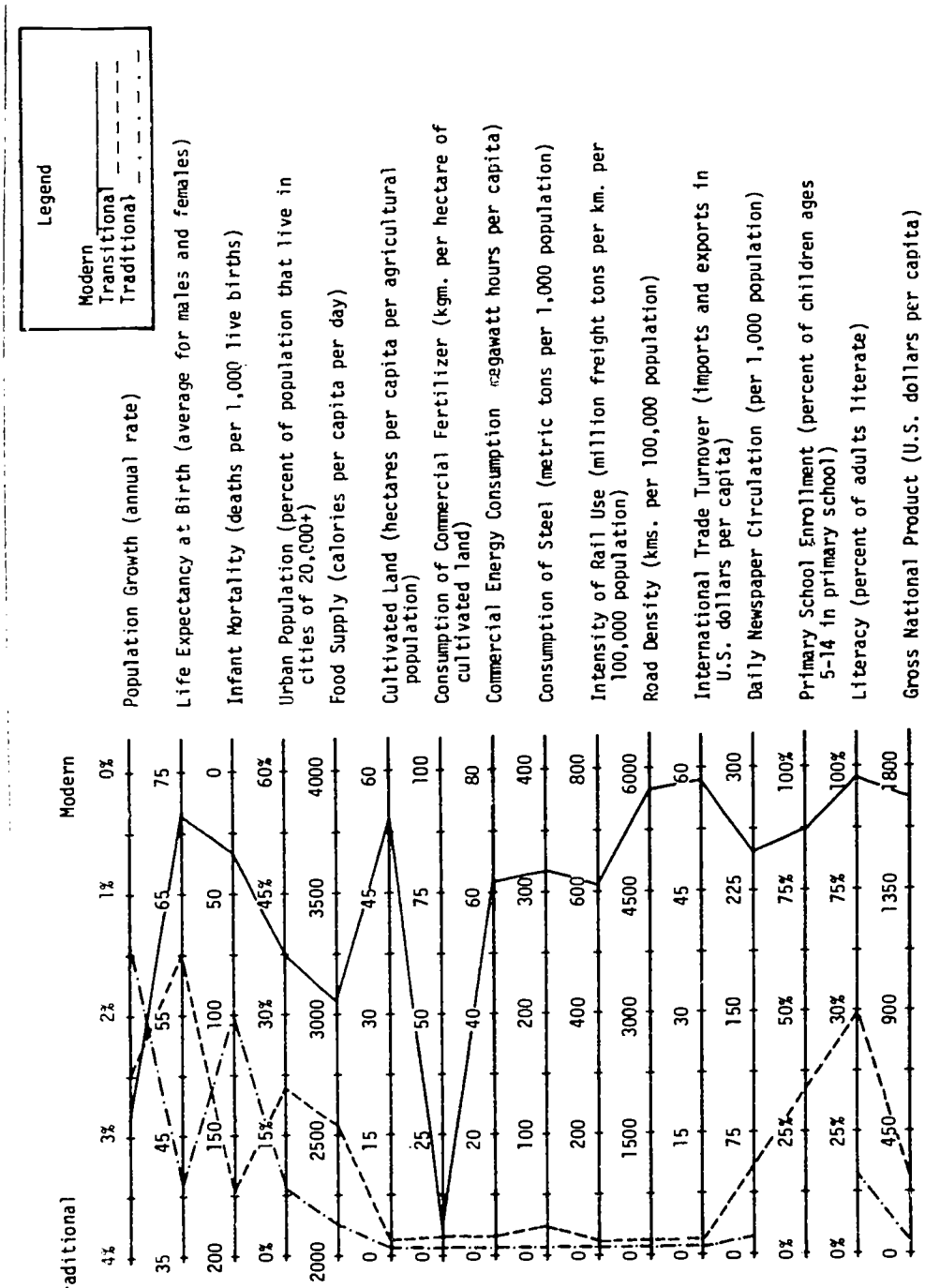


Fig. 3.31. Completed profile of cultural indicators for modern, transitional, and traditional societies

SELF-DIAGNOSTIC TEST

1. Write the four major categories of culture in the appropriate spaces in figure 3.32. Then select from the list examples for each category and write them under their category heading.

List of Examples

-municipal government
-Greek
-batik
-Lutheran
-the automobile
-sculpturing
-electricity generation
-kinship
-legal system
-hardware for a communication network
-development of new animal breeds
-tapestry
-Latin
-Greek Orthodox
-writing (e.g., a letter)

a	b	c	d

Fig. 3.32. Four major categories of culture (To be completed by the student)

2. Select the statements which describe the advantages of culture.

   a) Culture provides an environment in which a child can learn acceptable forms of behavior

   b) Culture provides an environment in which a sophisticated modern technology will develop

   c) One of the products of culture is it's symbolic form which enables man to communicate new ideas

   d) Cultures have preconceived ways of living which expand the uses they find for the environment

3. The chart below contains a list of cultural traits. Decide whether each trait is characteristic of the modern or of the traditional worlds; then place a check mark in the appropriate column.

Traits	Modern	Traditional
1. Rapid population growth		
2. Low infant mortality		
3. High urban population		
4. Adequate consumption of calories		
5. Only a few cultivated acres per agricultural population		
6. Limited electricity generation		
7. Limited commercial energy consumption		
8. High steel consumption		
9. Low railway density		
10. High gross national product		

Fig. 3.33. Cultural traits characteristic of modern and traditional worlds (To be completed by the student)

4. Use the information in figures 3.34-3.50 to determine which of the lettered countries are modern, transitional, or traditional. While you are not required to derive your answer by resorting to the graphing technique, the accuracy of your answer would be assured if you do use that technique. A sheet of graph paper is included following the data.

   If you do use the graphing technique use the following rules:

   a) A rank of "1" will be considered modern
   b) A rank of "2" or "3" will be considered transitional
   c) A rank of "4" or "5" will be considered traditional

Country	Indicator Population Growth (annual rate)	Rank
A	3.0%	
B	1.5	
C	3.4	
D	1.1	
E	2.0	

Fig. 3.34. Population growth (annual rate)

Country	Indicator Infant Mortality (Deaths per 1000 live births)	Rank
A	13.6	
B	58.0	
C	48.7	
D	14.2	
E	5.0	

Fig. 3.35. Infant mortality (Deaths per 1000 live births)

Country	Indicator Urban Population (Percent of population that lives in cities of 20,000 or more)	Rank
A	50	
B	70	
C	70	
D	71	
E	39	

Fig. 3.36. Urban population (percent of population in cities of 20,000 or more)

Country	Indicator Food Supply (calories per capita per day)	Rank
A	2,360	
B	3,160	
C	2,430	
D	2,470	
E	2,490	

Fig. 3.37. Food supply

Country	Indicator Cultivated Land (hectares per capita per agricultural population)	Rank
A	14.9	
B	30.0	
C	25.0	
D	717.0	
E	170.9	

Fig. 3.38. Cultivated land

Country	Indicator Consumption of Commercial Fertilizer (Thousand metric tons of phosphate potash and nitrogen)	Rank
A	55.4	
B	87.0	
C	72.0	
D	2,049.5	
E	647.7	

Fig. 3.39. Consumption of commercial fertilizer

Country	Indicator Commercial Energy Consumption (Kilograms in coal equivalent)	Rank
A	889	
B	1,728	
C	2,473	
D	3,251	
E	827	

Fig. 3.40. Commercial energy consumption

Country	Indicator Consumption of Steel (Metric tons per 1000 population)	Rank
A	.43	
B	3.69	
C	2.02	
D	68.88	
E	1.85	

Fig. 3.41. Consumption of steel

Country	Indicator Intensity of Rail Use (Millions of net-ton kilometers)	Rank
A	33	
B	12,284	
C	13	
D	59,872	
E	7,241	

Fig. 3.42. Intensity of rail use

Country	Indicator Road Density (Kilometers per 100,000 population)	Rank
A	.06	
B	9.39	
C	.43	
D	10.24	
E	.63	

Fig. 3.43. Road density

Country	Indicator Motor Vehicle Density (Total vehicles x 1000)	Rank
A	146	
B	2,113	
C	585	
D	16,529	
E	150	

Fig. 3.44. Motor vehicle density

Country	Indicator International Trade Turnover (Imports & exports in millions of U.S. dollars)	Rank
A	933	
B	3,846	
C	6,074	
D	52,062	
E	4,146	

Fig. 3.45. International trade turnover

Country	Indicator Daily Newspaper Circulation (Copies per 1000 population)	Rank
A	97	
B	128	
C	68	
D	503	
E	138	

Fig. 3.46. Daily newspaper circulation

Country	Indicator Gross National Product (U.S. dollars per capita)	Rank
A	496	
B	136	
C	981	
D	2,361	
E	366	

Fig. 3.47. Gross national product

Country	Indicator Literacy (Percent of population literate)	Rank
A	86.0%	
B	91.0	
C	76.0	
D	98.5	
E	85.0	

Fig. 3.48. Literacy

Country	Indicator Agricultural Labor Force (Percent of total labor force)	Rank
A	50.0%	
B	16.0	
C	26.0	
D	16.3	
E	51.0	

Fig. 3.49. Agricultural labor force

Country	Indicator Protein Consumption (Grams per day per capita)	Rank
A	69.9	
B	104.7	
C	59.7	
D	76.9	
E	72.9	

Fig. 3.50. Protein consumption

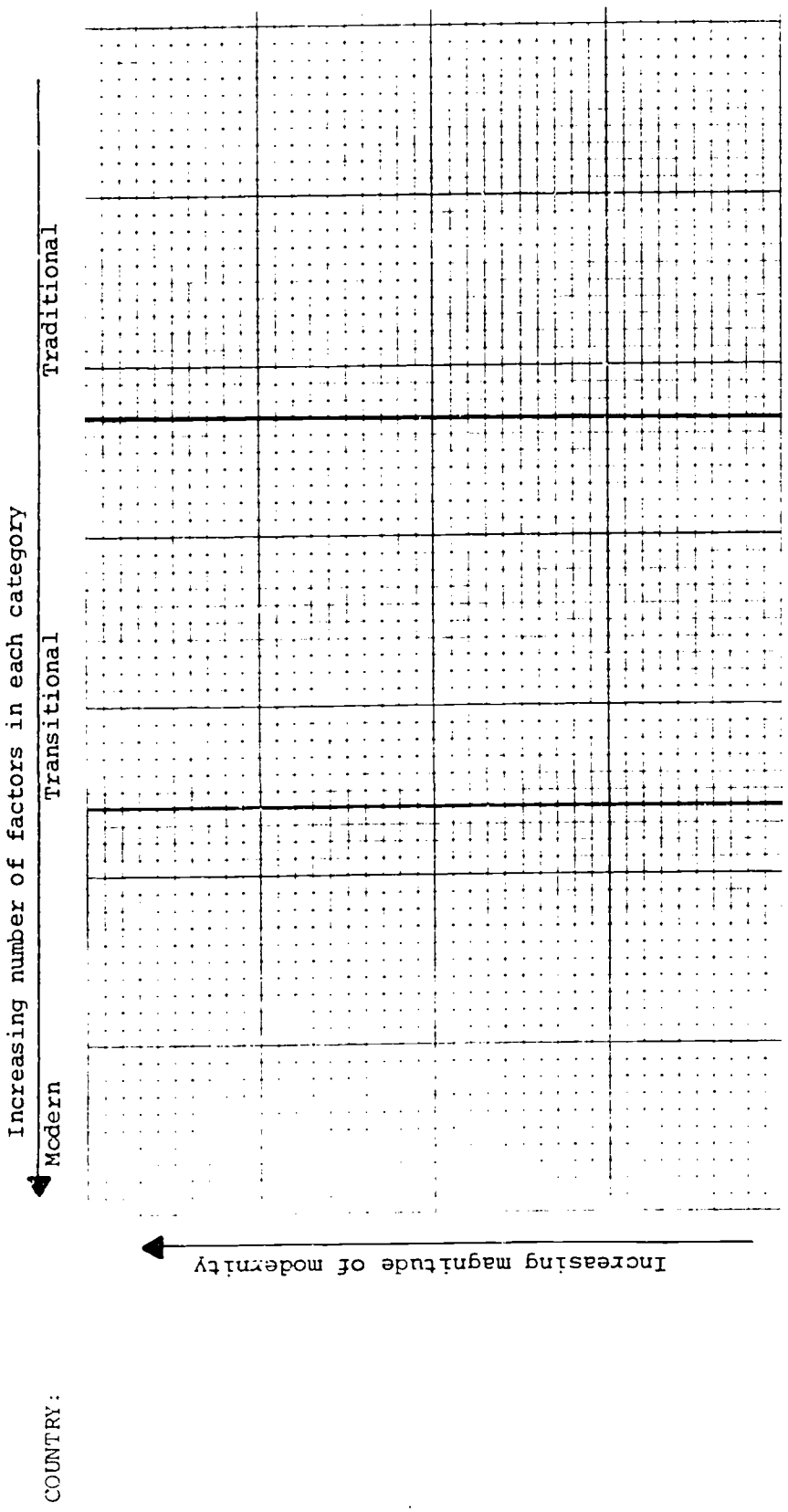


Fig. 3.51. Bar graph of modern, transitional, and traditional indicators of countries. (To be completed by the student)

5. The following questions deal with the relationships among cultural indicators. In order to assure the accuracy of your answers you may want to construct a graph of the cultural indicators for representative countries of the modern, transitional, and traditional worlds. The graph form appears in figure 3.52.

   If you do construct the graph, use the data for each of the following countries: Japan D (modern), Argentina B (transitional), and Lebanon A (traditional).

   a) Which one of the following seems to be the most important indicator of modernity?

      (1) Expressive arts
      (2) Religion
      (3) Social organization
      (4) Technology

   b) List the indicators that are closely related to technology.

   c) As the agricultural labor force decreases what population indicator is likely to increase?

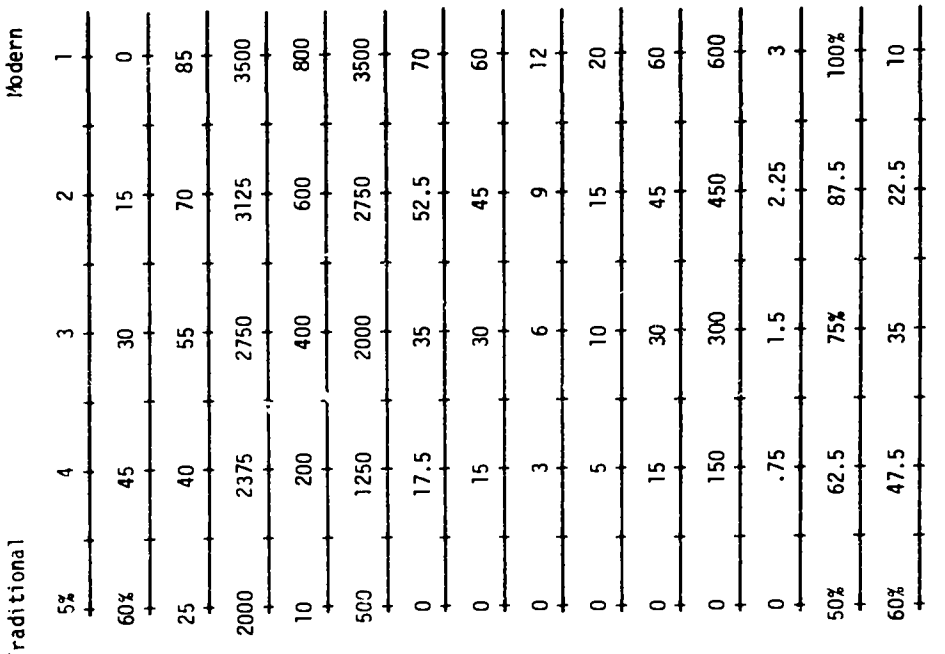


Fig. 3.52. Graph of cultural indicators for representative countries (To be completed by the student)

6. Assuming the existence of adequate food supplies at this time, to which of the following situations would the Malthusian principle apply first in the future?

   a) A country whose agricultural output increases by 10,000 tons per year and whose population increases by three percent per year

   b) A country whose agricultural output increases by 10,000 tons per year and whose population increases by 20,000 people per year

   c) A country whose agricultural output increases by five percent and whose population increases by five percent

   d) A country whose agricultural output increases by five percent per year and whose population increases by 20,000 persons per year

   e) A country whose agricultural output increases by 10,000 tons per year and whose population increases by 10,000 persons per year

SELF-DIAGNOSTIC TEST KEY

1.

a	b
Social Organization municipal government kinship legal system	Belief System Lutheran Greek Orthodox

c	d
Technology the automobile electricity generation hardware for a communications network development of new animal breeds	Symbolic Forms batik sculpturing tapestry writing Greek Latin

Fig. 3.53. Four categories of culture

2. a, c

3.

Traits	Modern	Traditional
1. Rapid population growth		✓
2. Low infant mortality	✓	
3. High urban population	✓	
4. Adequate consumption of calories	✓	
5. Only a few cultivated acres per agricultural population		✓
6. Limited electricity generation		✓
7. Limited commercial energy consumption		✓
8. High steel consumption	✓	
9. Low railway density		✓
10. High gross national product	✓	

Fig. 3.54. Cultural traits characteristic of modern and traditional worlds

4. Based on the analysis of the indicators for each of the countries we can conclude that a) Japan (D) is modern, b) Argentina (B) and S. Korea (E) are transitional, and c) Venezuela (C) and Lebanon (A) are traditional. (Graph appears in figure 3.55).

5. The completed graph for this exercise appears in figure 3.56.

   a) Technology

   b) (1) Infant mortality (a low rate of infant mortality implies the existence of a sophisticated medical technology)
      (2) Urban population
      (3) Food supply
      (4) Cultivated land
      (5) Commercial energy consumption
      (6) Consumption of steel
      (7) Intensity of rail use
      (8) Road density
      (9) Motor vehicle density
      (10) International trade turnover
      (11) Gross national product
      (12) Agricultural labor force

   c) Urban population is likely to increase as the agricultural labor force decreases.

6. The Malthusian principle would apply only to "a." You should note that inadequate food supplies will result for situation "b," but the principle will apply to "a" first.

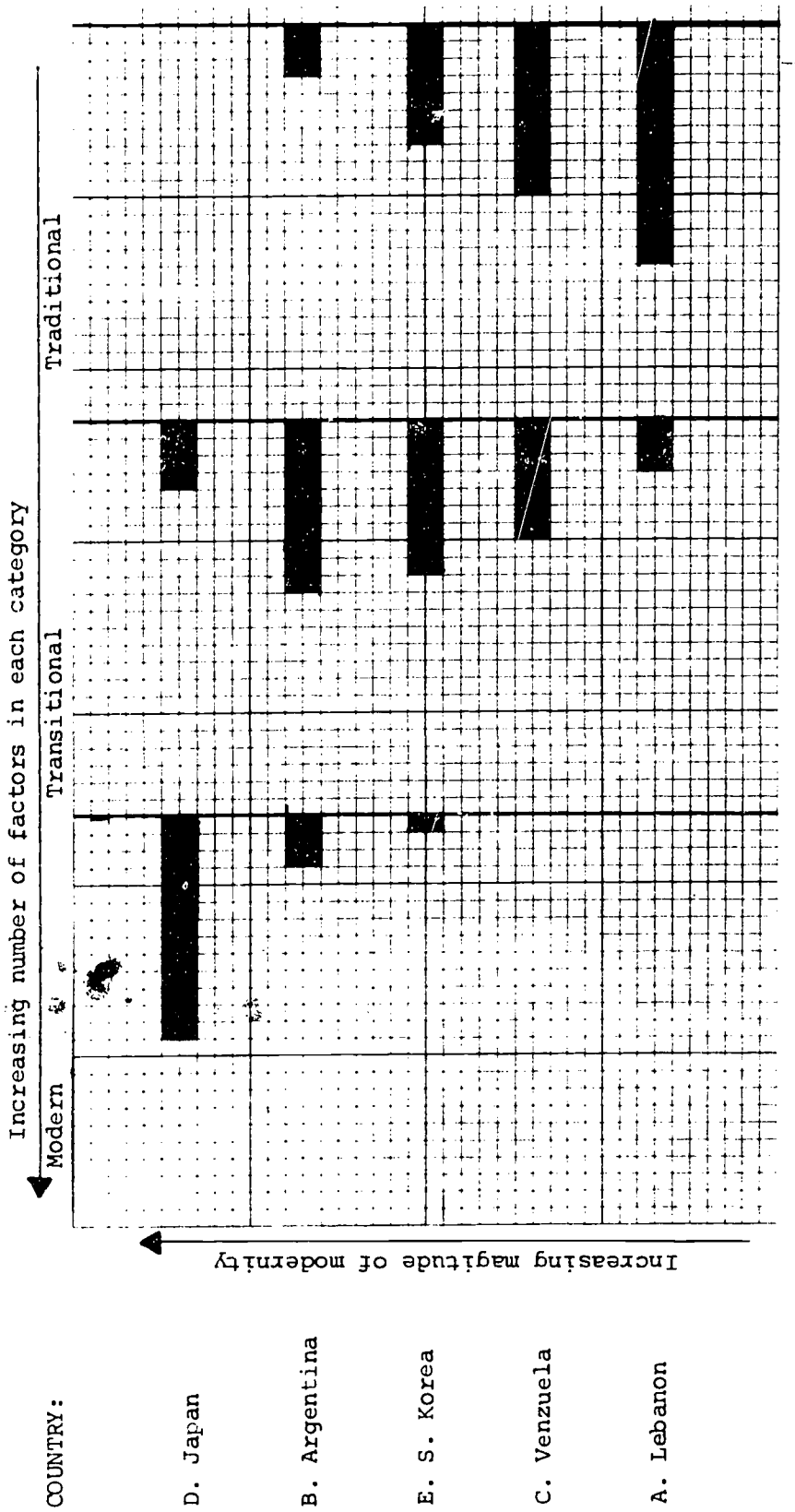


Fig. 3.55. Bar graph of modern, transitional, and traditional indicators of countries.

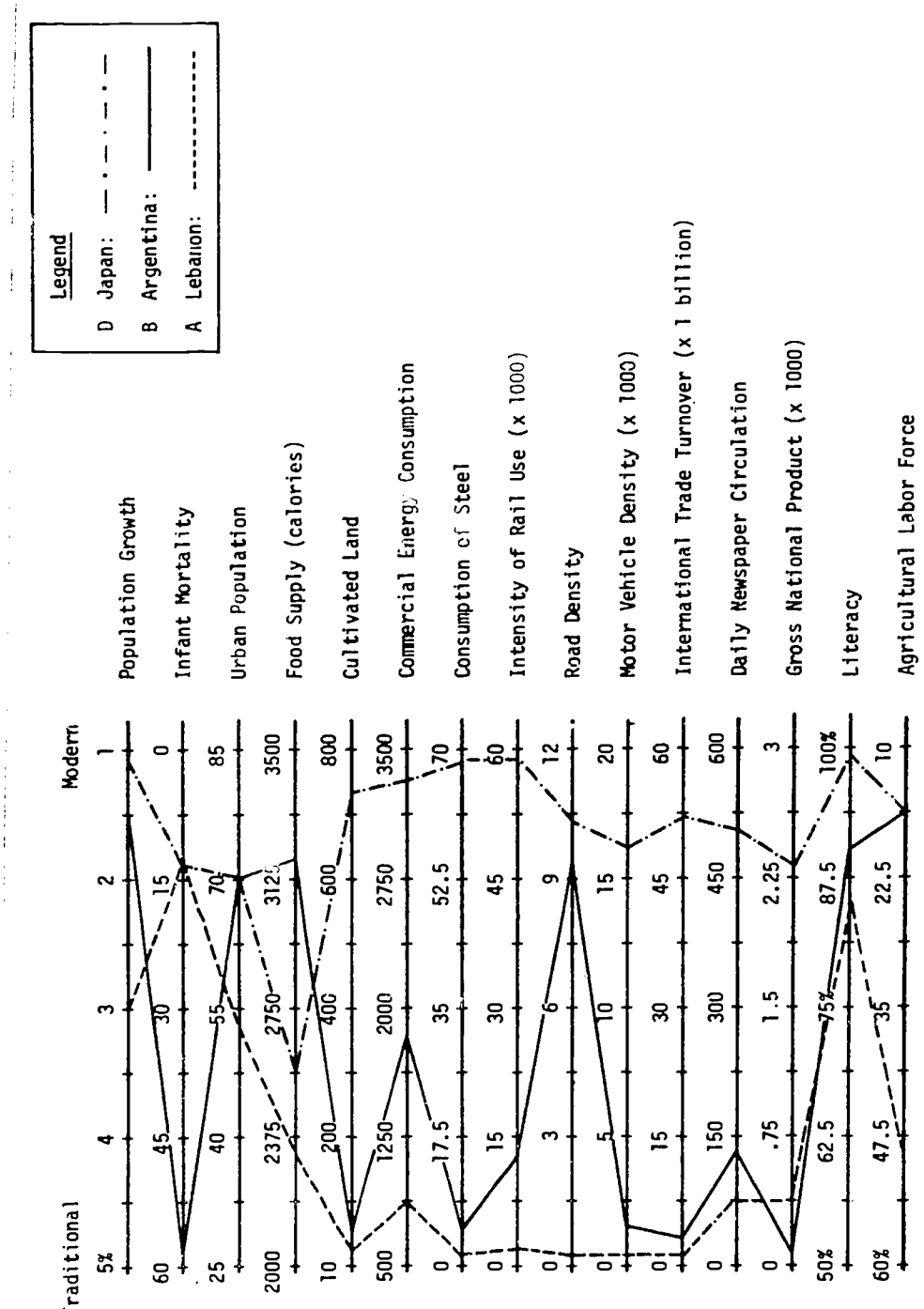
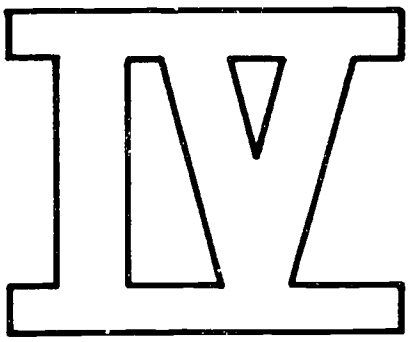


Fig. 3.56. Graph of cultural indicators for representative countries



The Modern World

PERFORMANCE OBJECTIVES

1. Given a number of statements, select those that help to explain positive and/or negative influences on a country's level of modernity in trade.

2. Given a number of statements select those that correctly describe the relationship between food production and a society's degree of modernization.

3. Select from a list of cultural factors associated with a modern nation, those whose existence require a modern transportation and communication network.

4. Given a number of statements, select those that correctly describe the varying employment patterns within the modern world.

5. Given a number of statements select those that correctly describe the relationship between energy and level of modernity.

6. Given a number of statements, select the ones that correctly describe how accessibility of a country's rural areas to urban centers both reflects and affects levels of modernization.

7. From a list, select the factors that account for pockets of underdevelopment, which normally exist in even the most modern countries.

STUDY DIRECTORY

Objective	Pages to Read in Textbook	Practical Exercises	Self-Diagnostic Test Items
1	291-307	1 and 2	1
2	278-81, 355-6, 340-5, 183-86	3 and 4	2
3	201-2, 206, 232, 302, 314, 316, 330	5 and 6	3
4	221-2, 379-80	7, 8, and 9	4
5		10 and 11	5
6		12	6
7		13 and 14	7

PRACTICAL EXERCISES

1. Respond to the following statements by placing a check in the appropriate column. Each statement either helps or does not help to explain the level of modernity for the country mentioned; that is, each country mentioned is modern, and it is your task to determine whether the statement provides a true or false explanation for the country's level of modernity. Examine the data in tables 4.1, 4.2, and 4.3, and read the sections in your textbook as specified in the study directory for objective one. Answers and explanations are found in the practical exercises key.

Explanation of Level of Modernity	True	False
a) The huge land area of the U.S.S.R. is a positive influence on that country's high amount of exports.		
b) The small size of Japan is a positive influence on its amount of imports.		
c) The huge size of the U.S.S.R. is a positive influence on its low amount of imports.		
d) A high import component in trade turnover implies a large resource base as in the U.S.		
e) A high import component in trade turnover implies a small resource base as in Japan.		
f) A balance of trade implies both a wide range of industries and a broad resource base as in the U.S.		
g) For any modern country, the range of diversity of traded products may be more important than the volume of trade.		
h) Higher trade turnover in any country is a measure of interconnectivity and thus of increasing modernity.		

2. Explain why each of the statements in question one was either true or false. Use the spaces below for each of your answers.

   a) The huge land area of the U.S.S.R. is a positive influence on that country's high amount of exports.

   b) The small size of Japan is a positive influence on its amount of imports.

   c) The huge size of the U.S.S.R. is a positive influence on its low amount of imports.

   d) A high import component in trade turnover implies a large resource base as in the U.S.

   e) A high import component in trade turnover implies a small resource base as in Japan.

f) A balance of trade implies both a wide range of industries and a broad resource base as in the U.S.

g) For any modern country, the range of diversity of traded products may be more important than the volume of trade.

h) Higher trade turnover in any country is a measure of interconnectivity and thus of increasing modernity.

TABLE 4.1

EXPORTS AND IMPORTS OF THE UNITED STATES, JAPAN, AND THE UNITED KINGDOM: 1938, 1955, 1965

	United States			United Kingdom			Japan		
	1965	1955	1938	1965	1955	1938	1965	1955	1938
Total Exports (Millions of U.S. dollars)	27532	15556	3102	13723	8613	2741	8452	2011	1109
Total Imports (Millions of U.S. dollars)	21431	11568	2191	16103	10029	4582	8170	2471	1070
Foreign Trade (percentage of G.N.P.)	7%	-	-	31%	-	-	19%	-	-
Distribution of Trade (percentage of total value)									
Exports									
Manufactured goods	55	58	na	75	74	73	86	82	na
(machinery)	(25)	(20)	(11)	(27)	(22)	(9)	(31)	(12)	(16)
(transport equipment)	(12)	(15)	(14)	(15)	(15)	(8)	(17)	(29)	(41)
(textiles and clothing)	-	-	-	(7)	(12)	(18)	(15)	(13)	(6)
(iron and steel)	-	-	-	-	-	-	-	-	-
Chemicals	9	7	3	9	8	5	-	-	-
Food	15	11	13	3	3	3	-	-	-
Crude materials and fuels	14	17	na	-	-	-	-	-	-
Imports									
Manufactured goods	49	32	na	34	20	na	17	9	na
(machinery and transport equipment)	(14)	(4)	(-)	(11)	(4)	(1)	(9)	(5)	(10)
(nonferrous metals)	-	-	-	(6)	(6)	(4)			
(textiles and clothing)	(6)	(4)	(6)	-	-	-			
Crude materials and fuels	25	34	na	29	38	na	59	61	na
(petroleum and products)	(10)	(9)	(2)	(11)	(9)	(5)			
Food	16	26	26	27	34	41	17	25	na
(coffee)	(5)	(12)	(7)	-	-	-	(9)	(18)	(1)
(fruit and vegetables)	-	-	-	(5)	(6)	(5)	5	3	2

TABLE 4.2

MAJOR TRADING PARTNERS OF THE UNITED STATES, JAPAN, AND THE UNITED KINGDOM (PERCENTAGE OF TOTAL VALUE)

United States			
Exports		Imports	
Canada	21%	Canada	23%
Japan	8	Japan	11
Germany F.R.	6	U.K.	7
U.K.	6	Germany F.R.	6
Mexico	4	Venezuela	5
Netherlands	4	Mexico	3
France	4	Italy	3

Japan			
Exports		Imports	
U.S.A.	30%	U.S.A.	29%
Liberia	4	Australia	7
Australi	4	Kuwait	4
Hong Kong	3	Philippines	4
China P.R.	3	Iran	3
Philippines	3	U.S.S.R.	3
Thailand	3		

United Kingdom			
Exports		Imports	
U.S.A.	11%	U.S.A.	12%
Australia	6	Canada	8
Southfield	6	Netherlands	5
Germany F.R.	5	Germany F.R.	5
Sweden	5	Australia	4
Canada	4	Sweden	4
Netherlands	4	South Africa	4

The number of times in which the countries in table 4.2 had a first place rank in one of the forty-eight trading categories (such as trade in cereals, fruits and so on) is given in table 4.3. The "Trade Turnover" column is a summation of the "Imports" and "Exports" columns.

TABLE 4.3

FIRST PLACE RANK IN FORTY-EIGHT TRADING CATEGORIES

Countries	Imports	Exports	Trade Turnover
Japan	21	12	33
U.K.	40	12	52
U.S.A.	36	25	61
U.S.S.R.	14	22	36

3. Examine the data in table 4.4 and fill in the chart below. Check the country (or countries) that fits each statement.

Food Self-Sufficiency	U.S.A.	U.K.	JAPAN	U.S.S.R.
a) Which country appears to be relatively self-sufficient in terms of limited imports?				
b) Which country is relatively self-sufficient but has the greatest amount of imports and exports?				
c) Which country is self-sufficient in most food groups and has imports that consist almost entirely of those foods it cannot grow itself?				
d) Which countries import foods that they themselves produce but not to the extent of the country in "c"?				
e) Which country has the most intensive farming methods (you may want to refer to Goode's Atlas)?				
f) If the degree of modernization is partly dependent on food self-sufficiency and the amount and variety of food that is imported and exported, how would you rank these four countries? (A rank of 1 = most modern, and 4 = least modern)				
g) Which country has the greatest amount of				
(1) Imports				
(2) Exports				
(3) Variety of imports				
(4) Variety of exports				

TABLE 4.4

PRODUCTION, EXPORTS, AND IMPORTS OF FOODSTUFFS
IN THOUSAND METRIC TONS:
1963-1965 AVERAGE

	U.S.			U.K.			JAPAN			U.S.S.R.		
FOOD STUFFS	PROD	EXP	IMP	PROD	EXP	IMP	PROD	EXP	IMP	PROD	EXP	IMP
Cereals												
Corn	98114	12832	24	-	-	3400	88	-	3103	10931	638	-
Oats	13280	180	54	1346	8	27	135	-	9	5195	21	-
Potatoes	12115	97	90	7108	87	323	3793	18	-	84484	-	-
Rice	3322	1359	11	-	-	112	16366	-	535	473	7	265
Wheat	33981	8587	76	3638	52	4087	1082	-	3472	61229	2600	
Fruit	22620	700	1637	883	18*	1369	3818	37	356	na	na	1568
Beverages												
Coffee	3	37.7	1362	-	3*	71	-	-	19	-	-	30
Tea	-	-	59	-	18*	251	81	4	3	45	9	30
Vegetable Oilseeds and oils												
Olive Oil	na	-	22	-	-	3	-	-	0.4	-	-	5
Soya Beans	20373	5554	-	-	-	300	263	0.2	1666	380	-	31
Livestock, Animal Products												
Chickens	370735	-	-	110629	-	-	108794	-	-	485100	-	-
Cattle	155529	46	842	16000	265	619	5305	2	1	124901	-	-
Pigs	56770	11	5	7406	32	1	3578	1	66	54555	-	-
Butter	645	35	-	39	2	448	22	-	-	1007	44	4
Cheese	1055	8	36	111	3	148	13	-	8	467	-	24
Eggs	3800	9	-	822	3	15	924	1	-	1574	-	94
Milk	57012	5208	13	12620	271	882	3003	23	743	64503	-	-
Fish	2716	119	916	994	58	731	6652	547	183	4518	207	94

*re-exports

4. Select the statements that reflect a high degree of modernization.

   a) Self-sufficiency in food
   b) Few food exports
   c) Few food imports
   d) A great deal of food exports
   e) A great deal of food imports
   f) A moderate amount of food imports
   g) A large variety of imports
   h) A large variety and amount of exports

EXAMINE THE DATA IN TABLE 4.5 AND ANSWER QUESTIONS FIVE AND SIX WHICH FOLLOW. THIS DATA RELATES TO TRANSPORTATION AND COMMUNICATION CHARACTERISTICS OF FOUR COUNTRIES THAT ARE A PART OF THE MODERN WORLD.

TABLE 4.5

TRANSPORTATION AND COMMUNICATION DATA
FOR THE U.S., U.K., JAPAN,
AND U.S.S.R.

1963 - 1965 Averages	U.S.A.	U.K.	JAPAN	U.S.S.R.
Motor Vehicle Use				
Private (per capita)	.36	.15	.02	fewest
Commercial (per capita)	.07	.03	.04	fewest; exceeds private
Railway Track Density (amount of track in km. per sq. km.)	.038	.104	.075	.006
Mail per capita:				
Domestic	345	197	92	22
Foreign	13	18	2	fewest
Telephones (per 1000 urban population)	50	21	18	4
Radios (per 1000 population)	1140	297	204	315
Televisions (per 1000 population)	346	243	171	57
Daily Newspapers (per 1000 population)	315	507	429	229

5. The data in table 4.5 represents nine transportation and communication factors. You should now construct a profile of those factors for each country. To do that follow these directions:

   a) Rank each country by each factor. The number "1" will represent the most favorable (most modern) rank. Thus, it can be seen that for the factor "Motor Vehicle Use--Private," the U.S. ranks "1," the U.K. ranks "2," and so on.

   b) Now, tabulate the number of first, second, third, and fourth order ranks for each country and enter the results in table 4.6.

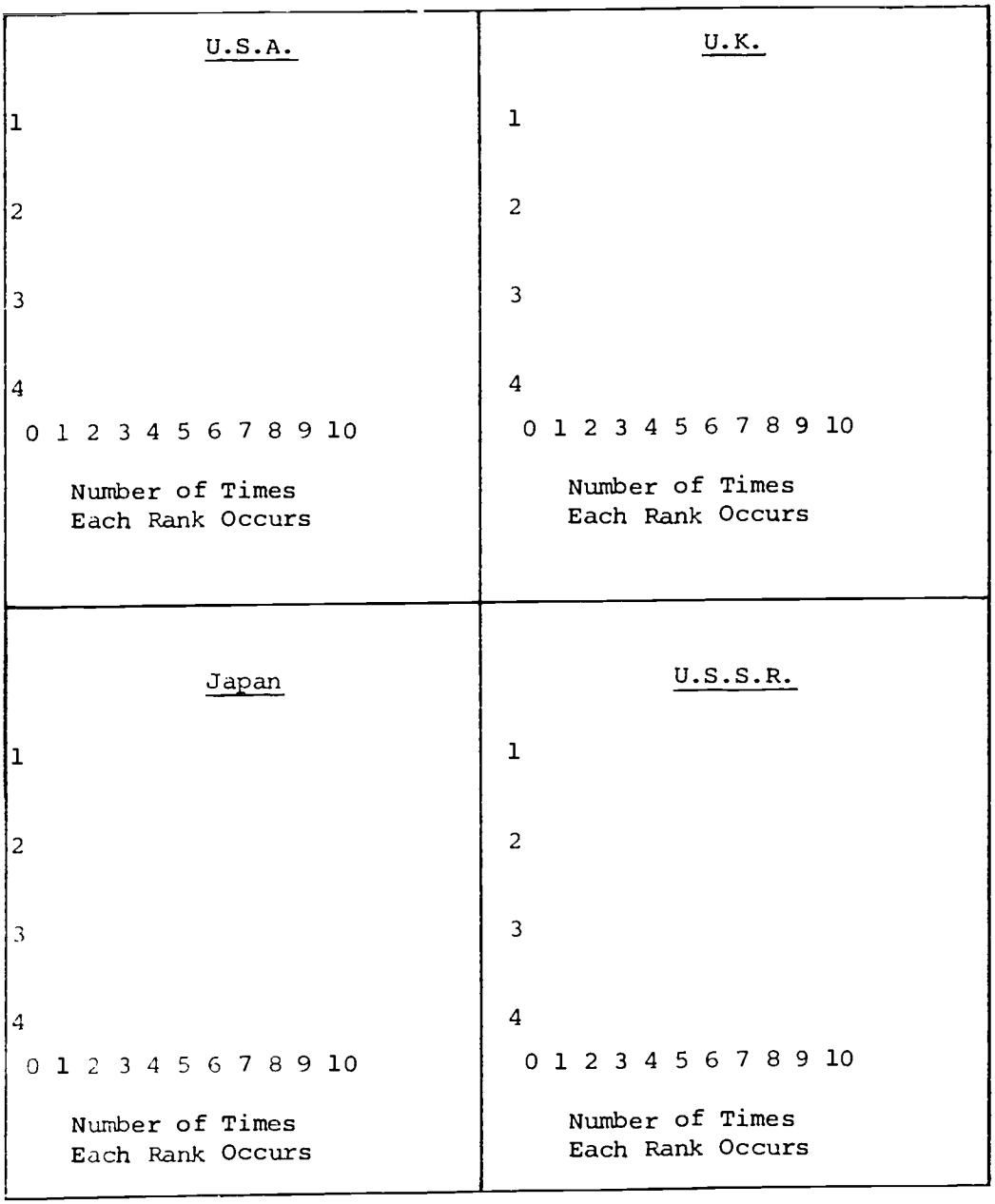
TABLE 4.6

TRANSPORTATION AND COMMUNICATION
RANKINGS OF FOUR COUNTRIES

	Number of Each Rank			
Countries	1	2	3	4
U.S.A.				
U.K.				
Japan				
U.S.S.R.				

   c) Draw a profile of this tabulation on the chart on the next page. To do this you should find the number of times each rank occurs, move up the vertical line to the appropriate rank and place a dot at that point. After you have put the four dots on the profile, join the dots with a line. The dot (in our case an "x") has been placed at the appropriate spot (for the U.S.) for the rank of "1."

5. (Continued) Profile of transportation and communication rankings of four countries.



6. In unit three you examined a number of cultural indicators of the modern, transitional, and traditional worlds. Those indicators are listed below. Compare the profiles you just constructed and determine which of the following cultural indicators, when they are related to a modern country, require a modern transportation and communication network.

   a) Low population growth

   b) Low infant mortality

   c) Youthfulness of the population

   d) High urban population (percent of population in cities of 20,000 or more)

   e) Abundant food supply (calories per capita per day)

   f) A great deal of cultivated land (hectares per capita per agricultural population)

   g) High consumption of commercial fertilizer

   h) High electricity generation

i) High commercial energy consumption (megawatt hours per capita)

j) High consumption of steel (metric tons per 1000 population)

k) High international trade turnover (imports and exports in U.S. dollars per capita)

l) Large primary school enrollment

m) High literacy

n) High gross national product

TABLE 4.7 CONTAINS DATA REGARDING THE DISTRIBUTION OF THE WORKING POPULATION (I.E., EMPLOYMENT PATTERNS) FOR THE UNITED KINGDOM, JAPAN, RUSSIA AND THE UNITED STATES. EXAMINE THE DATA AND ANSWER QUESTIONS SEVEN, EIGHT AND NINE WHICH FOLLOW. NOTE THAT THE FOUR COUNTRIES HAVE BEEN ARRANGED FROM MOST MODERN (U.S.A.) TO LEAST MODERN (U.S.S.R.).

TABLE 4.7

EMPLOYMENT PATTERNS OF THE U.S., U.K., JAPAN, AND U.S.S.R.

1963-1965 Average	U.S.	U.K.	JAPAN	U.S.S.R.
Total work force in millions	78.0	24.9	49.0	109.0
Agricultural Sector (%) (agriculture, fishing, hunting, forestry)	6.2	3.1	26.9	35.2
Industrial Sector - Total (%)	43.2	53.2	50.2	33.6
a) manufacturing	25.6	34.8	23.6	(NA)
b) quarrying, mining, construction	7.1	10.1	7.0	(NA)
c) electricity, gas, water, sanitation	1.4	1.7	19.6	(NA)
d) transportation, storage, communication	4.8	6.6		(NA)
e) other	4.3	-	-	(NA)
Service Sector - T	50.6	43.7	22.9	31.2
a) service	27.6	27.7	16.7	26.5
b) commerce and others	23.0	16.0	6.2	4.7

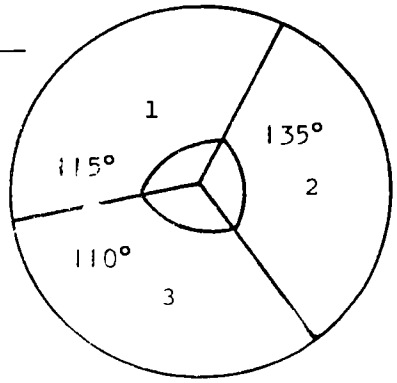
7. Read the following statements and decide to which country each applies. For each statement place an "x" in the appropriate column.

Increasingly modern ←

Statements	U.S.	U.K.	JAPAN	U.S.S.R.
a) The greatest proportion of the workers of this country are employed in the agricultural sector.				
b) The greatest proportion of the workers of this country are employed in the industrial sector.				
c) The greatest proportion of the workers of this country are employed in the service sector.				
d) This country's employment pattern is relatively the same in all sectors.				
e) Two countries in which the smallest proportion of the labor force are employed in the agricultural sector.				
f) Compared to the other countries, this country has the smallest proportion of its labor force employed in the industrial sector.				
g) The smallest proportion of this country's labor force are employed in the service sector.				
h) The country in which the proportion of workers in the industrial sector ranks second and the proportion in the service sector ranks first.				

8. Indicate the degree of modernity represented by each graph by writing in the space provided, the number "1" for the most modern, "2" for the next to most modern, and a "3" for the least modern. These graphs represent the proportion of the labor force in various sectors of employment.

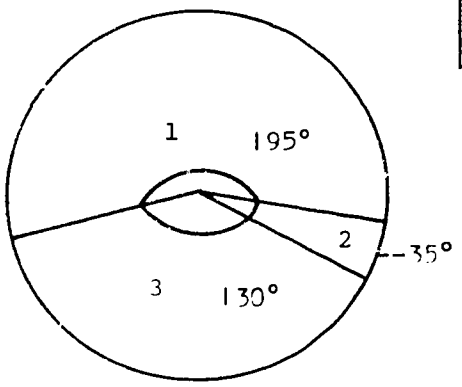
a) _____



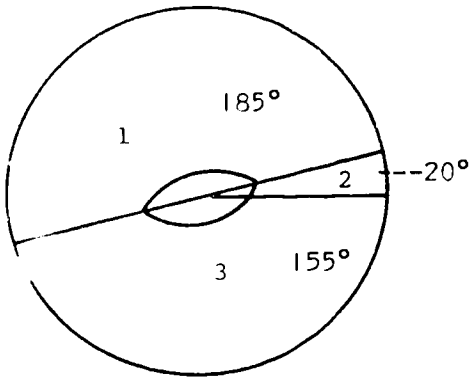
Legend

1 = Industrial sector
2 = Agricultural sector
3 = Service sector

b) _____



c) _____



9. Select the statements that correctly describe the employment pattern within modern societies.

   a) The most modern societies have the smallest percentage of their labor forces employed in the service sector

   b) The least modern societies have about an equal proportion of their labor forces employed in all sectors

   c) Societies becoming increasingly modern have an increasingly greater percentage of their labor forces employed in industry

   d) The most modern societies have the smallest percentage of their labor forces employed in agriculture

   e) As societies become more modern the percentage of their labor forces employed in the service sector increases

CONTINUE ON TO THE NEXT PAGE.

TABLE 4.8

ENERGY PRODUCTION, EXPORTS AND IMPORTS
1963-1965 AVERAGE

	Production				Exports				Imports			
	U.S.	U.K.	Japan	U.S.S.R.	U.S.	U.K.	Japan	U.S.S.R.	U.S.	U.K.	Japan	U.S.S.R.
Coal A[a]	453.5	195.4	50.8	207.7	11.9	5.9	0.8	22.1	.25	.01	13.8	5.7
Coal B	.9	-	0.2	213.9	-	-	-	-	-	-	-	-
Coke	na	na	na	na	.5	1.6	0.2	3.8	.10	-	0.2	.70
Electricity[b]												
Total	4000.	184.2	177.3	459.4				-				
Hydro	182.0	4.'	71.4	78.2[f]				-				
Nuclear	3.4	10.2	0.03					-				
Thermal	896.7	169.8	105.9	381.1				-				
Natural Gas[c]	436.8	0.2	2.0	106.7	.60	-	-	-	12.3	0.3	-	-
Crude Oil[d]	397.3	0.1	0.7	224.2	.20	0.7	0.03	36.8	60.2	59.2	61.7	.2
Petroleum Refined[d]	426.4	52.7	54.6	16.7	5.1	9.4	0.6	20.3	53.0	18.6	12.4	1.8
Uranium[e]	9.3	-		na	.005	-		-	5.1	-		na

[a] Thousand metric tons

[b] Million kilowatt hours

[c] Million cubic meters

[d] Million barrels

[e] Metric tons

' Total of hydro and nuclear electric power

- Negligible or nil

Coal A - bituminous
Coal B - lignite

10. Use the data in table 4.8 and the information on pages 47-50 in Goode's World Atlas to help you fill in the following chart. When you have completed the chart, use the information to answer question eleven.

For the chart below, place a check under the country that is related to each statement.

Questions	U.S.	U.K.	JAPAN	U.S.S.R.
a) Which country is most self-sufficient in meeting its energy needs?				
b) Which country is least self-sufficient in meeting its energy needs?				
c) Which country has developed most of its water power?				
d) Which country has developed the least of its water power?				
e) Which two countries have the greatest coal reserves?				
f) Which country has the greatest natural gas reserves?				
g) Which two countries have the greatest proven petroleum reserves?				
h) Which country has the greatest energy consumption?				
i) In the immediate future assuming that alternative sources of energy are not adopted, which is the only country that will be self-sufficient in meeting its energy requirements?				

11. Based on the information in the exercise you just completed, list the factors which are positively related to a high level of modernity in the area of energy.

12. A recent study hypothesized that there may be a strong positive relationship between a country's level of modernization and the spatial distribution of cities in that country. That is, "the spatial distribution of cities in a country both affects and reflects the level of modernization of that country. . . . It is hypothesized that a country's levels of modernization is positively related to the degree of accessibility evidenced in its urban spatial distribution."

Your task is to determine the validity of the above hypothesis. To help you in your research, the following directions and questions are offered for guidance.

a) Rank the countries in terms of number of urban centers (100,000 or more population). You will have to look at the maps of the individual countries. The legend for city sizes is on pages 211 of Goode's Atlas. A rank of "1" would indicate the greatest number of centers. Make this calculation for a common base, e.g., per one million population.

Country	Square Miles	Population
(1) Chile	290,969	8,834,820
(2) Kenya	223,969	10,942,765
(3) Angola	479,231	5,673,046
(4) Denmark	16,555	4,937,784
(5) Turkey	300,053	35,666,549

b) Rank the countries in terms of accessibility of the rural populace to the closest urban centers having a population of at least 100,000.

Use Goode's World Atlas to determine accessibility in terms of average number of miles from a sample of rural areas to their closest urban centers having a population of at least 100,000. For each country, divide the number of square miles of the entire country by the number of cities of 100,000 or more population. The area of each country is given on the preceding page.

c) Rank each of the countries separately in terms of each of the following (the pages refer to Goode's World Atlas). A rank of "1" would be most favorable, while a rank of "5" would be least favorable (there will be ties in some cases).

(1) Population increase (p. 27)
(2) Infant mortality rate (p. 26)
(3) Literacy (p. 28)
(4) Agricultural production - wheat (p. 34)
(5) Agricultural production - oats (p. 35)
(6) Agricultural production - cattle (p. 41)
(7) Density of surface transportation (pp. 52-53)
(8) Amount of exports (p. 54)
(9) Amount of imports (p. 54)

The chart below contains nine columns--one for each factor outlined above. Rank each country in each column by using the letter "C" for Chile, "K" for Kenya, "A" for Angola, "D" for Denmark and "T" for Turkey. If you can't be exact about a rank make a rough estimate.

	Factors								
Rank	1	2	3	4	5	6	7	8	9
1									
2									
3									
4									
5									

d) To what extent do each of your ranks for "C" correspond to your ranks for "B"? This will constitute a rough estimate of the correlation between accessibility and each of the factors in "C." If a country has the same or similar rank for "B" and "C" the correlation is positive (i.e., there is a strong positive relationship).

e) According to your findings, is there any support for the hypothesis stated earlier?

(1) Does there seem to be a relationship between accessibility and level of modernization? (Denmark is the most modern country and Angola is the least modern.)

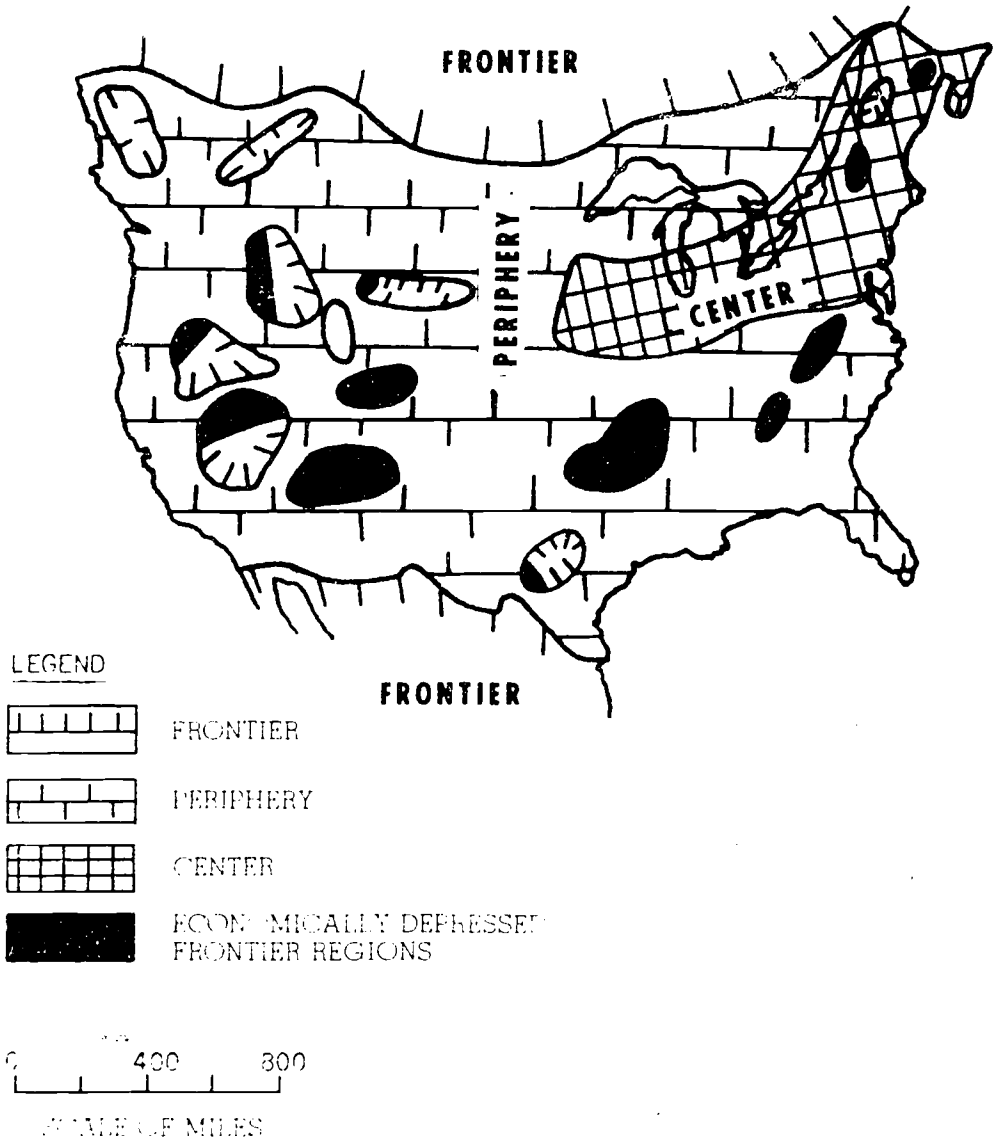
(2) Explain how accessibility affects modernization? List a number of advantages when there is high accessibility.

13. The map of North America on the next page shows "center," "periphery," and "frontier" areas. These regional distinctions were derived from the data contained in the map of transportation, Goode's World Atlas. You should be aware that the transportation measures described below reflect the accessibility of rural areas to urban centers.

The "center" is a region of dense transportation facilities including automobile roads and railroads. All areas in this region are within twenty-five miles of automobile roads. The "periphery" is a region of less dense transportation facilities that include some major, but mostly minor, railroads. The less dense character of the transportation network results from numerous dead-end railroad feeder lines that connect into the trunk lines. All areas are within twenty-five miles of automobile roads. The "frontier" is a region with penetration lines (railroad and automobile road); that is, lines which extend only a few miles into the area. The majority of areas are beyond twenty-five miles of automobile roads. The shaded areas of the map constitute those frontier regions in the U.S. that are classified as "economically depressed."

Fill in the chart which begins on page 166. Maps to be analyzed for each statement are referenced in parenthesis. You should determine whether each statement is or is not typical of the pockets of underdevelopment that exist within the United States. You should analyze those sections of maps in Goode's Atlas that relate only to the shaded frontier areas that appear in the map of North America.

GROUND TRANSPORTATION



Statements	Typical of frontier areas	Not typical of frontier areas
a) Mountainous areas of high relief greater than 500 feet (p. 75)		
b) Low plains areas with relief less than 1000 feet (p. 75)		
c) Areas of cropland (pp. 76-77)		
d) Areas of grassland and grazing land (pp. 76-77)		
e) Areas of forest and woodland (pp. 76-77)		
f) Areas of shrub, sparse grass, and wasteland (pp. 76-77)		
g) Areas of constantly sparse or great rainfall (p. 80)		
h) Areas of high grain production (p. 86)		
i) Areas of major animal husbandry (p. 86)		
j) Areas of heavy industry (p. 86)		
k) Areas with mining activities (p. 87)		

14. Explain why pockets of traditionalism are likely to exist even in the most modern countries.

PRACTICAL EXERCISES KEY

1.

Explanation of Level of Modernity	True	False
a) The huge land area of the U.S.S.R. is a positive influence on that country's high amount of exports.	✓	
b) The small size of Japan is a positive influence on its amount of imports.		✓
c) The huge size of the U.S.S.R. is a positive influence on its low amount of imports.	✓	
d) A high import component in trade turnover implies a large resource base as in the U.S.		✓
e) A high import component in trade turnover implies a small resource base as in Japan.		✓
f) A balance of trade implies both a wide range of industries and a broad resource base as in the U.S.	✓	
g) For any modern country, the range of diversity of traded products may be more important than the volume of trade.	✓	
h) Higher trade turnover in any country is a measure of interconnectivity and thus of increasing modernity.	✓	

2. a) A country of great physical size is likely to have a large resource base, i.e., a large amount of raw materials. When that is the case, as it is in the case of the U.S.S.R., size positively influences the country's level of modernity.

   b) It is true that Japan's small size is the cause of its necessity to import a large quantity of products; however, that does not explain its level of modernity. Ordinarily when a country's imports exceed its exports in dollar value, there may develop a balance of payments problem. That is, the country may spend more for its imports than it earns from its exports. A high level of modernization cannot be maintained under those circumstances. Japan is no exception. It imports large volumes of relatively low value raw materials but exports smaller quantities of high value manufactured goods.

c) This does help to explain USSR's level of modernity. USSR has a very large supply of raw materials and, according to production data, she does not import nor export in large volume. This improves her balance of trade which is usually favorable.

d) This is a contradictory statement and does not explain the level of modernity of the U.S. The U.S. has a large resource base, but that is not the reason for its large volume of imports. It is the consumer economy of the U.S. which demands a large variety of products and which in turn creates a demand for imported products.

e) A country of small size is likely to require a great deal of imports. Because of this disparity between needs and availability, Japan is likely never to match the level of modernity of the U.S. Thus, the statement does help to explain the small size of Japan as a limiting factor.

f) This statement does help to explain the level of modernity in the U.S. A large resource base has motivated the growth of a large industrial complex. This, in turn, has resulted in the large amounts of exports. The resulting high GNP has produced a consumer-oriented economy requiring a large amount and variety of imports.

g) This statement also helps to explain modernization. Varied imports and exports implies a large and varied industrial base and a population that can afford to demand not only imported necessities but a variety of imported products that normally are not necessities.

h) High trade turnover implies that lines of communication exist to many countries. The degree of communication with distant places and the resulting exchange of ideas and goods is a measure of interconnectivity. Only countries with a modern and productive industrial base that produce a wide variety of products and that have a relatively high level of personal income will export and import a large variety of products.

3.

Food Self-Sufficiency	U.S.A.	U.K.	JAPAN	U.S.S.R.
a) Which country appears to be relatively self-sufficient in terms of limited imports?				✓
b) Which country is relatively self-sufficient but has the greatest amount of imports and exports?	✓			
c) Which country is self-sufficient in most food groups and has imports that consist almost entirely of those foods it cannot grow itself?				✓
d) Which countries import foods that they themselves produce but not to the extent of the country in "c"?		✓	✓	
e) Which country has the most intensive farming methods (you may want to refer to Goode's Atlas)?			✓	
f) If the degree of modernization is partly dependent on food self-sufficiency and the amount and variety of food that is imported and exported, how would you rank these four countries? (A rank of 1 = most modern, and 4 = least modern)	1	2	3	4
g) Which country has the greatest amount of				
(1) Imports	✓			
(2) Exports		✓		
(3) Variety of imports				
(4) Variety of Exports	✓			

4. Explanation:

a) Self-sufficiency is an important factor because a country that must depend on others for its food supply may develop economic hardship during times of high prices.

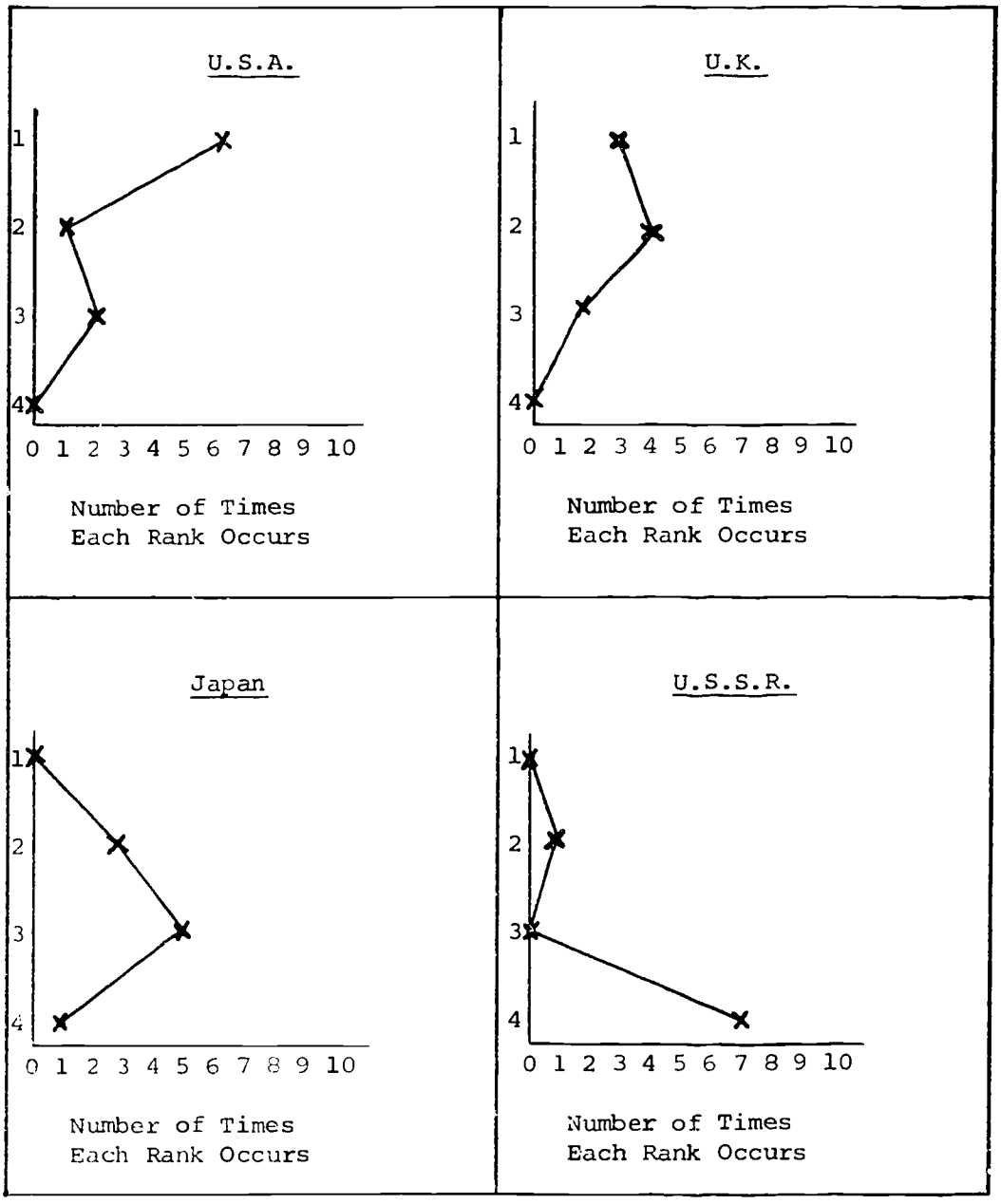
f and g) Modern societies communicate freely with all parts of the world. One form of communication is trade. In the United States, for example, a large variety of imported foods are available. Their availability does not result from a lack of national supplies but rather from knowledge, curiosity, taste, and interest in the rest of the world.

h) The ability of a country to maintain its economic growth lies partly in its export capabilities. Generally, the most modern countries are able to export a large variety of products including food and are self-sufficient in meeting most of its needs. Countries, like Japan, that must rely on others for much of their food supplies have a limited growth potential, for much of their cash reserves must be used to pay for this food. This generally increases food costs and lowers the buying power of the local currency. All of this in general restricts the country's level of modernity.

5.

Countries	Number of Each Rank			
	1	2	3	4
U.S.A.	6	1	1	0
U.K.	3	4	2	0
Japan	0	3	5	1
U.S.S.R.	0	1	0	8

5.


U.S.A.
1
2
3
4
0 1 2 3 4 5 6 7 8 9 10
Number of Times
Each Rank Occurs
U.K.
1
2
3
4
0 1 2 3 4 5 6 7 8 9 10
Number of Times
Each Rank Occurs
Japan
1
2
3
4
0 1 2 3 4 5 6 7 8 9 10
Number of Times
Each Rank Occurs
U.S.S.R.
1
2
3
4
0 1 2 3 4 5 6 7 8 9 10
Number of Times
Each Rank Occurs

6. It does not appear that a, b, c, e, f, and g require a modern transportation and communication network.

   d) Urban population. Increases in urban population are normally associated with increasing industrialization. This in turn affects GNP and therefore the ability of the population to consume and support an extensive communications network.

   h) Electricity generation. Increased electricity generation is a sign of increased industrial and private demand for electricity. In the industrial sector electricity is a source of power, and high electricity generation implies a substantial industrial output. This, in turn, requires extensive trackage and commercial vehicle transportation. Further, private consumption of radios, televisions, telephones, and other appliances spurs increases in electricity generation.

   i) Commercial energy consumption. See "h" above.

   k) International trade turnover. International trade is highly related to all facets of transportation and amount of international mail.

   l) Primary school enrollment. Individuals residing in rural areas must be transported to schools.

   m) Literacy. Both primary school enrollment and literacy probably are related to the consumption of communications especially in the form of newspapers and mail.

   n) Gross national product. A high gross national product reflects a high industrial output and a high degree of consumerism. Both of these, in turn, will affect the various communications factors.

Statements	U.S.	U.K.	JAPAN	U.S.S.R.
a) The greatest proportion of the workers of this country are employed in the agricultural sector.				✓
b) The greatest proportion of the workers of this country are employed in the industrial sector.			✓	
c) The greatest proportion of the workers of this country are employed in the service sector.	✓			
d) This country's employment pattern is relatively the same in all sectors.				✓
e) Two countries in which the smallest proportion of the labor force are employed in the agricultural sector.	✓	✓		
f) Compared to the other countries, this country has the smallest proportion of its labor force employed in the industrial sector.				✓
g) The smallest proportion of this country's labor force are employed in the service sector.			✓	
h) The country in which the proportion of workers in the industrial sector ranks second and the proportion in the service sector ranks first.	✓			

8. a) 3
   b) 2
   c) 1

   Graph "c" is typical of the modern employment pattern in which (1) the majority of the population (about 51% in this case) is employed in the service sector, (2) slightly less employed in the industrial sector (43% in this case), and (3) the least proportion employed in agriculture.

   Graph "b" represents a country that is somewhat less modern than that represented by "c." Notice the higher proportion of the population employed in industry and agriculture at the expense of the service sector.

   Finally, Graph "a" represents the least modern society in which relatively equal proportions of the population are employed in each sector.

9. b, c,

10.

Questions	U.S.	U.K.	JAPAN	U.S.S.R.
a) Which country is most self-sufficient in meeting its energy needs?				✓
b) Which country is least self-sufficient in meeting its energy needs?			✓	
c) Which country has developed most of its water power?			✓	
d) Which country has developed the least of its water power?				✓
e) Which two countries have the greatest coal reserves?	✓			✓
f) Which country has the greatest natural gas reserves?				✓
g) Which two countries have the greatest proven petroleum reserves?	✓			✓
h) Which country has the greatest energy consumption?	✓			
i) In the immediate future assuming that alternative sources of energy are not adopted, which is the only country that will be self-sufficient in meeting its energy requirements?				✓

11. The following factors are positively related to a country's level of modernization in energy:

a) Self-sufficiency in the country's ability to meet its needs in a variety of energy sources

b) The lack of development of the country's water power implies that this inexpensive source of energy can be used in the future as other sources become scarce and considerably more expensive

c) Reserves of the various energy sources to meet future needs

A country which is representative of these factors can meet its present needs and its needs for an expanding industrial and consumer oriented economy.

12. a) Number of cities of 100,000 or more population

Turkey - 22
Chile - 14
Denmark - 5
Kenya - 2
Angola - 1

Number of cities (100,000 or more population) per one million total population (in rank order)

Chile 1.60 (rank of 1)
Denmark 1.0 (rank of 2)
Turkey 0.62 (rank of 3)
Kenya 0.16 (rank of 4)
Angola 0.18 (rank of 4)

b) Accessibility (square miles per city of 100,000 or more)

Denmark 3,311 (rank of 1)
Turkey 13,639 (rank of 2)
Chile 20,783 (rank of 3)
Kenya 111,984 (rank of 4)
Angola 479,231 (rank of 5)

c)

Rank	Factors 1	2	3	4	5	6	7	8	9
1	D/A	D/C	D	D	D	D	D		D
2	T/K/C	T	C	T	T	T	T	C	T/C
3		K	T	C	C	C/K	C	T	K/A
4		A	K/A	K/A	K/A	A	A	K/A	
5									

d) In part "b" you saw that Denmark, Turkey, and Chile ranked 1, 2, and 3, while Kenya and Angola were tied for the lowest rank. Virtually, the identical rank appears for the nine factors in part "c." It does, therefore, appear to be a strong positive relationship between accessibility and the nine factors.

e) The results definitely support the hypothesis of a strong positive relationship (correlation) between accessibility and modernity. The precise nature of this relationship is outlined in the paper reprinted below.

"Accessibility to Cities and Levels of Modernization"*

Abstract

The spatial distribution of cities in a country both affects and reflects the level of modernization of that country. An empirical analysis of fifty-three countries indicated that two measures of accessibility to cities developed by the author were positively related to indices of modernization independent of the percentage of the population urban. This relationship was particularly strong for developing countries and lends some support to policies of urban deconcentration and the establishment of growth centers in developing nations.

*Richard Rhoda, "Accessibility to Cities and Levels of Modernization," unpublished paper presented at the Association of American Geographers, Annual Meeting, Milwaukee, April, 1975. Reprinted by permission of author.

"Accessibility to Cities and Levels of Modernization"

This paper investigates the relationship between the spatial distribution of cities and modernization. It is hypothesized that a country's levels of modernization is positively related to the degree of accessibility evidenced in its urban spatial distribution. Level of modernization is operationally defined by several indices reflecting the general welfare and standard of living of individuals in countries.

Level of modernization reflects the accumulation of modernizing innovations, such as improved health practices, higher levels of education, enhanced communication, and the adoption of techniques increasing labor productivity. Generally, innovations of this type are first adopted in the largest cities of a country and are later diffused along communication channels down the urban hierarchy and eventually outward to rural areas (Olsson, 1965; Brown, 1968; Peterson, 1970; Berry, 1972). Mass media are important in the spread of awareness of innovations, but interpersonal communication is more important in the decision to adopt these innovations (Rogers and Shoemaker, 19[illegible]). Distance presents little resistance to mass media, but inhibits interpersonal communication and acts as a barrier to the diffusion of innovations. Because communication channels are more highly developed between cities, distances between cities present far less of a barrier to innovation [illegible] than do distances between cities and rural areas. Modernizing innovations diffuse relatively quickly down the urban hierarchy and relatively slowly outward from cities to rural areas. Accumulation of modernizing innovations, therefore, is related to accessibility to cities.

There are other ways in which accessibility to cities affects the process of modernization. In addition to serving as distribution centers for urban goods and services, cities are large consumers of rural products and act as gateways to world markets for these products. The transportation costs of moving both rural products to urban markets and urban goods and services to rural communities increase with distance from cities. Because rural populations generally incur these costs, their incomes and standards of living tend to decrease with distance from cities. Furthermore, access to cities heightens rural aspiration levels which can increase incentives for rural production.

The discussion so far has concentrated the effects the spatial distribution of cities has on the process of modernization. The process of modernization also affects the spatial distribution of cities. As the standard of living in an area increases, the demand for urban goods and services also increases. This increased demand stimulates the growth of cities in the area by pushing the area beyond thresholds for goods and services. In short, the spatial distribution of cities in a country both affects and reflects the level of modernization in that country.

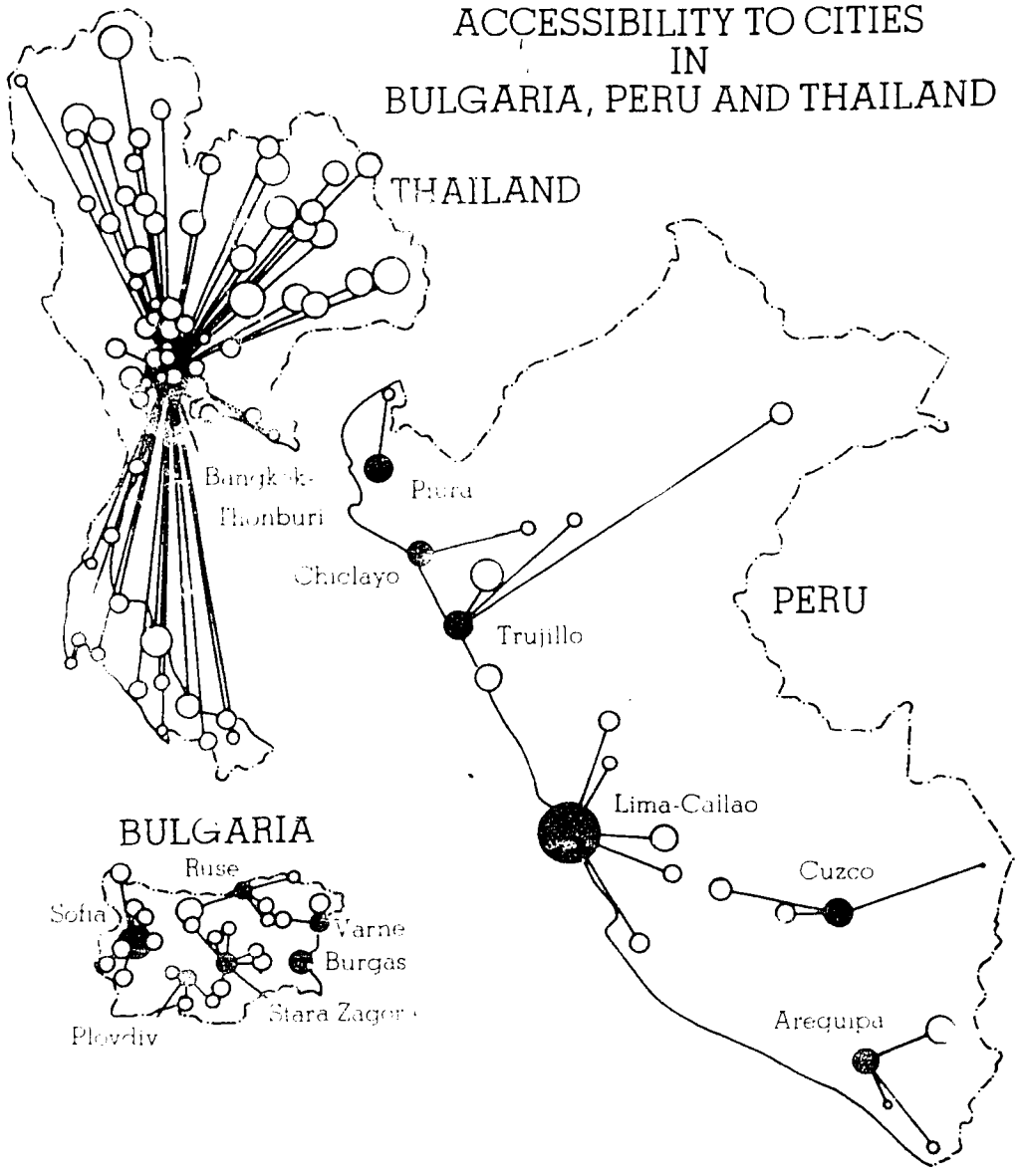
Hence, countries, like Bulgaria, with city distributions readily accessible to rural populations, should exhibit higher levels of modernization than countries with less accessible cities, such as Peru or Thailand (Fig. 1).

Measuring Accessibility to Cities

The average straight line distance between elements of a population and the nearest city provides a simple inverse measure of the accessibility of a country's population to its cities. For purposes of this study, cities were operationally defined as urban settlements with populations of 100,000 or more. This simple accessibility measure implicitly assumed that all such cities had equal effects on their hinterlands; however, it was expected that places near very large cities received innovations sooner and had higher standards of living than places near smaller cities. To account for this, a second inverse measure of the average accessibility of a country's population to its cities was formulated using a gravity model based on Reilly's Law of Retail Gravitation (Reilly, 1931). These inverse measures of accessibility are actually measures of inaccessibility.

Each of these measures was formulated by first separating the total population of a country into small spatial subareas (administrative or census districts). Subarea populations were assumed to be concentrated at the largest town in each subarea. For the first measure, subareas were assigned to the nearest city and, for the second measure, to the city having the greatest influence on the subarea according to Reilly's Law which incorporates both distance and city size. Finally, the two measures were computed using the following equations:

$$\bar{d} = \frac{1}{P} \sum_{i=1}^{N} p_i d_i \qquad (1)$$



	Bulgaria	Peru	Thailand
D, Average Distance to Cities	34.0	68.5	22[illegible]
D/3, Gravity Measure of Inaccessibility to Cities	17.7	25.8	11.3
Percent Urban	21.5	26.5	8.2
Persons per Square Mile	198.8	27.3	170.0
Index of Modernization	+1.45	+0.15	-0.67

and

$$DG = \frac{1}{P} \sum_{i=1}^{N} p_i \sqrt{\frac{dg_i}{cp_i / 100{,}000}} \qquad (2)$$

where: D = average distance separation between a country's population and its cities,

P = total population of the country,

N = number of spatial subareas in the country,

p_i = population of subarea i,

d_i = distance from subarea i to the nearest city,

DG = gravity measure of inaccessibility to cities,

dg_i = distance from subarea i to the city which has the greatest influence on it according to Reilly's Law,

cp_i = population of the city which has the greatest influence on subarea i according to Reilly's Law.

Since cp_i in the second equation (2) was divided by an arbitrary standard city population of 100,000, the units of DG are miles as are the units of D. Therefore, D and DG can be directly compared and are readily interpretable.

Empirical Analysis

To test the association between the two measures of inaccessibility to cities and indices of level of modernization, 1970 data were collected for fifty-three countries. The following eight indexes of the level of modernization of countries were used: (1) life expectancy at birth, (2) literacy rate of the population over age fifteen, (3) crude death rate, (4) crude birth rate, (5) radio receivers per 1,000 population, (6) circulation of general interest newspapers per 1,000 population, and (7) grams of protein consumed per capita per day, as well as (8) a synthetic index incorporating the other seven. These appear to be the most appropriate indexes available to measure general welfare and standard of living, particularly in developing countries. Factor scores of the common factor of a principle components analysis of the seven selected indexes comprise the synthetic index of modernization.

The distributions of the two measures, D and DG, for the fifty-three countries were very skewed and plots revealed a curvilinear relationship between these measures and the modernization indices. . . .

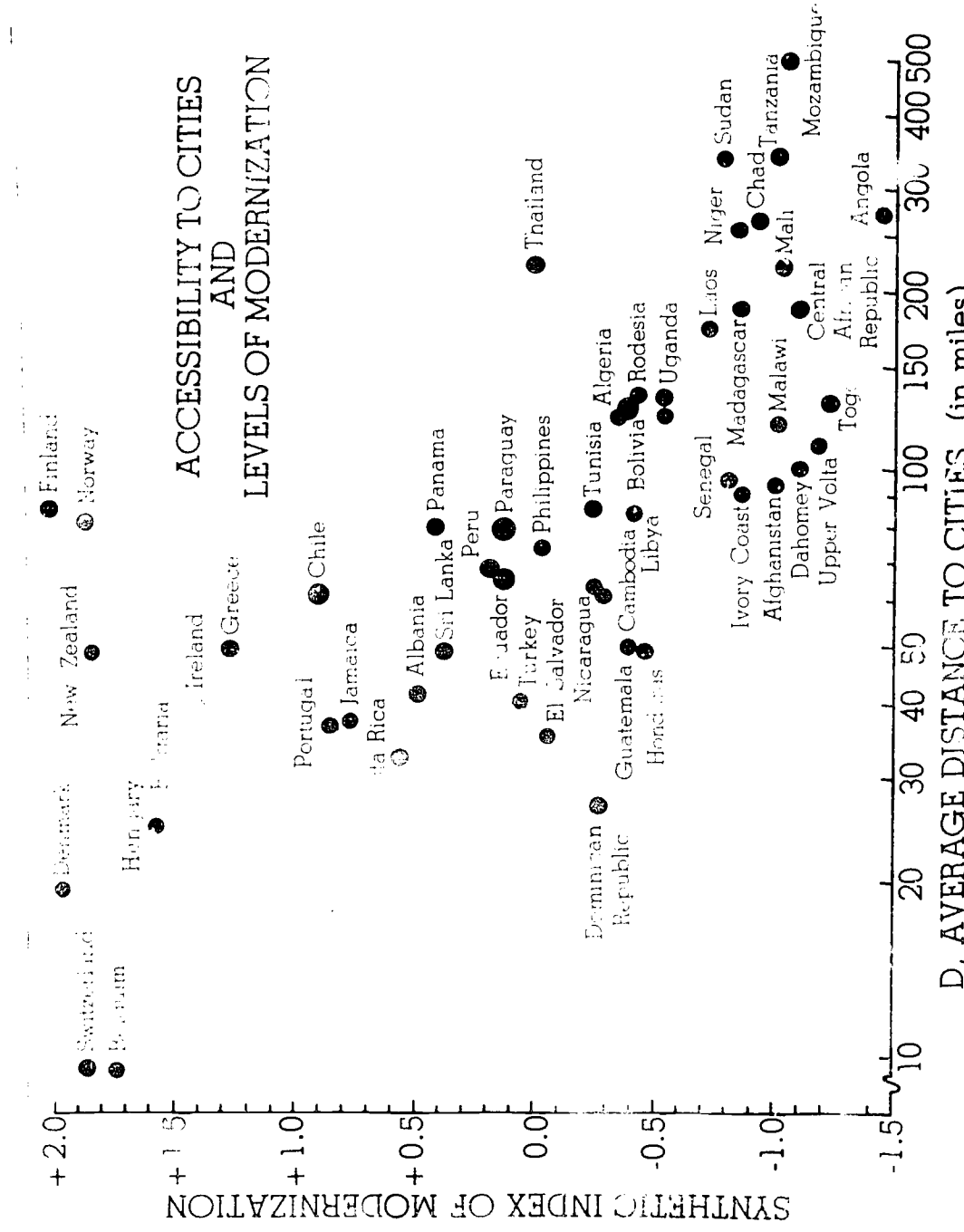
The . . . correlation . . . between the modernization indices and both D and DG were significant. . . . As hypothesized, accessibility to cities was associated with levels of modernization.

As measured in this study, average accessibility to cities was dependent upon the spatial distribution of cities with respect to rural populations and the proportion of the populations which had immediate access to cities (the percentage urban). The direct relationship between levels of modernization and the spatial distributions of cities was assessed. . . . Percentage urban was operationally defined as the percentage of the total population living in urban settlements of 100,000 or more. . . . Correlation[s] . . . indicated that the two measures were associated with life expectancy, literacy, crude birth and death rates, and the synthetic index. . . . In general, countries with . . . spatially dispersed urban systems are more modernized than countries with . . . spatially clustered urban systems.

Accessibility to cities, as operationalized in this study, is related to population density (Fig. 1). . . . [However,] differences in population densities do not account for the observed relationship between accessibility to cities and modernization.

The observed relationship appears relatively weak in developed countries (Fig. 2). There are several reasons for this finding. First, the selected modernization indexes did not effectively discriminate between developed countries. Second, because transportation and communication systems were generally well developed in these countries, distance did not present as significant a barrier to the diffusion of modernizing innovations. Finally, higher incomes in these countries provided thresholds for many modernizing institutions in cities of less than 100,000.

A second analysis was conducted using data from the forty-three developing countries in the sample. Countries with scores on the synthetic index of over 1.0 were excluded in this analysis (Fig. 2). The split between developed and developing countries according to this somewhat arbitrary criterion fell between Greece (1.27) and Chile (.90). . . . [This second analysis showed] that the relationship between spatial distributions of cities and levels of modernization was particularly strong for developing countries.


ACCESSIBILITY TO CITIES
AND
LEVELS OF MODERNIZATION
SYNTHETIC INDEX OF MODERNIZATION
D, AVERAGE DISTANCE TO CITIES (in miles)
+2.0
+1.0
+0.5
0.0
-0.5
-1.0
-1.5
10
20
30
40
50
100
150
200
300
400
500
Finland
Norway
New Zealand
Ireland
Greece
Chile
Portugal
Jamaica
Albania
Panama
Sri Lanka
Peru
Paraguay
Thailand
Philippines
Tunisia
Algeria
Rodesia
Uganda
Bolivia
Cambodia
Libya
Guatemala
Nicaragua
Senegal
Laos
Niger
Sudan
Chad
Tanzania
Mozambique
Mali
Malawi
Madagascar
Ivory Coast
Afghanistan
Dahomey
Upper Volta
Central
Republic
Angola

Conclusions

The empirical findings indicate that the accessibility of a country's population to its cities was positively related to the level of modernization of that country independent of the percentage of its population urban. This relationship was particularly strong in developing countries. Since general welfare measures were used as measures of modernization, these empirical findings do not directly suggest strategies for economic development. However, the findings do lend some support to policies of urban decentralization and the establishment of growth centers to achieve goals of increased welfare and standards of living.

Using countries as units of observation, this study demonstrates that at one point in time two very general concepts, accessibility to cities and level of modernization, were related. Future research in this area should be more process-oriented and focus on more specific phenomena using smaller units of observation. For example, changes in the accessibility of individuals or rural communities to health clinics could be related to changes in indicators of health such as life expectancy at birth or death and disease rates. Such studies could increase our comprehension of modernization as well as provide useful information to planners in developing countries.

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13.

Statements	Typical of frontier areas	Not typical of frontier areas
a) Mountainous areas of high relief greater than 5000 feet	✓	
b) Low plains areas with relief less than 1000 feet		✓
c) Areas of cropland		✓
d) Areas of grassland and grazing land		✓
e) Areas of forest and woodland	✓	
f) Areas of shrub, sparse grass, and wasteland	✓	
g) Areas of constantly sparse or great rainfall	✓	
h) Areas of high grain production		✓
i) Areas of major animal husbandry		✓
j) Areas of heavy industry		✓
k) Areas with mining activities	✓	

14. Pockets of traditionalism exist mainly in unproductive areas. These areas usually have poor lands that are unable to support intensive agriculture. Occasionally, these areas are mining regions. The people of these regions are generally poorly paid and live in company towns. Industry is limited. In Appalachia, some isolated patches of sloping land are farmed by poor, near-subsistence farmers.

Climate does not account for the existence of these areas except where rainfall is so sparse that deserts result. Poor soils, difficult terrain, and lack of agricultural potential account for their existence. As a result, these areas are largely undeveloped and require financial assistance from federal agencies.

The major role of these areas is to act as suppliers of raw materials to the urban and industrial areas of the country.

SELF-DIAGNOSTIC TEST

1. Select the statements that accurately describe the relationship between a country's level of modernity and trade.

   a) A country's large size may increase its export capabilities thereby improving its level of modernity

   b) A large resource base may increase a country's export capabilities thereby improving its level of modernity

   c) A higher level of modernity may be reached when a country has a high trade turnover

   d) The diversity of imports, rather than the amount of imports, reflects a country's level of modernity

   e) A wide range of industries resulting in a diversity of imports and exports is one measure of a country's level of modernity

   f) A country's small size precludes the necessity of many imports and thereby increases its level of modernity

   g) A high level of modernity can be achieved only when a country requires little or no imports

2. Select the statements that accurately describe the relationship between food production and a country's degree of modernity.

   a) Self-sufficiency in food
   b) A small quantity of food imports
   c) A small quantity of food exports
   d) A large quanitity of food imports
   e) A large quantity of food exports
   f) A small variety of food imports
   g) A large variety of food imports
   h) There does not seem to be any relationship between food production and a country's degree of modernity.

3. Select from the following list of cultural indicators those that require a modern transportation and communication network.

   a) Low population growth
   b) Low infant mortality
   c) Youthfulness of population
   d) High urban population
   e) Abundant food supply
   f) Cultivated land in large commercial enterprises
   g) High consumption of commercial fertilizer
   h) High electricity generation
   i) High commercial energy consumption
   j) High consumption of steel
   k) High international trade turnover
   l) Large primary school enrollment
   m) High literacy
   n) High gross national product

4. Select the statements that correctly describe the employment pattern of modern societies.

   a) The most modern societies have the smallest proportions of their labor forces employed in agriculture, and the largest proportions employed in services

   b) The least modern societies have the smallest proportions of their labor forces employed in agriculture and the largest proportions employed in industry

   c) The most modern societies have the greatest proportions of their labor forces employed in industry and the smallest numbers employed in agriculture

   d) Societies which become increasingly more modern have progressively smaller proportions of their work forces employed in industry and larger proportions in agriculture

   e) Least modern societies have roughly equal proportions of their work forces in each of the three employment sections

5. Select the statements that correctly describe the relation between energy utilization and resources and a country's level of modernity.

   a) High energy utilization implies a large industrial base. This may necessitate the importation of a large amount of energy sources. This large industrial base, with the importation of a variety of energy sources, reflects a high level of modernity.

   b) In order to maintain its level of modernity and perhaps to increase it, a country should have full reserves which it does not presently require.

   c) Water power, being the cheapest source of energy generation, would increase the modernity of a country possessing that potential.

   d) A high level of modernity in energy implies that a country can both meet its present needs and have reserves to meet its future needs.

6. Select the statements that describe how accessibility (transportation and communication) of a country's rural areas to urban centers both reflects and affects levels of modernity.

   a) Accessibility affects the levels of modernity in that it facilitates the dissemination of innovations.

   b) Accessibility affects the levels of modernity when innovations can be disseminated both among urban centers and between urban and rural areas.

   c) Accessibility enlarges the market for rural products.

   d) Accessibility reflects levels of modernity in that indices such as (1) life expectancy at birth, (2) literacy rate, (3) death rate, (4) birth rate, (5) number of radio receivers, and (6) newspaper circulation are all positively related to rural areas which are accessible to urban centers.

   e) All of the above

7. Place a check beside those factors that are characteristic of the pockets of underdevelopment that normally exist in even the most modern countries.

___ a) Highly mountainous areas

___ b) Areas of productive crop land

___ c) Areas of harsh climate

___ d) Mining areas

___ e) Areas which are inaccessible to urban centers

___ f) Areas of heavy industry

SELF- DIAGNOSTIC TEST KEY

1. a, b, c, d, and e

2. g and h

   Note: Some modern countries like the U.K. and Japan are not self-sufficient in food production. Others, like the U.S., are self-sufficient.

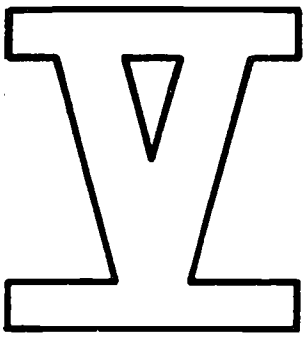
3. d, e, f, h, i, j, k, l

4. a, e

5. a, b, c, d

6. e

7. a, c, d, e



The Traditional World

PERFORMANCE OBJECTIVES

1. Given a number of statements, select those that are characteristic of traditional societies in terms of

   a) Trade

   b) Food production

   c) Transportation and communication

   d) Employment pattern

   e) Energy resources

   f) Physical environment and climate

   g) Social factors

2. Given a number of statements select those that describe

   a) A modern country's relationship with traditional countries

   b) A traditional country's relationship with other traditional countries

   c) Traditional "centers" with other traditional "centers"

   d) Traditional "centers" with traditional "peripheries"

   e) Traditional "peripheries" with other traditional "peripheries"

   f) The reason for these relationships

3. Given a number of statements, select those that correctly describe accessibility as a measure of traditionalism and select those that correctly explain the relationship between low accessibility and traditionalism.

4. From a number of statements, select the one that most accurately explains the role of a locally based economy in maintaining a state of traditionalism.

5. Given a traditional country and appropriate social, economic, environmental, and demographic data, determine (a) what factors need to be improved in order for that country to modernize, and (b) the limits to modernization.

STUDY DIRECTORY

Objectives	Pages to Read in Textbook	Practical Exercise Questions	Self-diagnostic Test Items
1 a)	443-449; 494-497; 520	1 - 9	1
b)			
c)	476-477		
d)	452-455; 464-466		
e)			
f)	426-430; 467-471; 536		
2	390-393; 402-407; 417; 440-441; 459; 494	10	2
3	408-409; 454; 456; 489; 545	11	3
4	510	12	4
5	408-410; 449-452; 498-499; 500-502; 506-507; 526-528	13 - 14	5

PRACTICAL EXERCISES

Tables 5.1 through 5.6 either contain or ask you to complete data characteristics of traditional countries in terms of trade, food production, transportation and communication, employment pattern, energy resources, and physical environment and climate. Three countries from different continents are represented. These are Peru, from South America; Syria, from the Middle East; and Tanzania, from Africa.

1. Complete table 5.1 by referring to those maps in Goode's World Atlas that are referenced in parentheses. Place a check in the appropriate column beside each statement. Then, answer questions two through four.

2. Between which parallels of latitude are most traditional countries located? Are there any exceptions?

TABLE 5.1

PHYSICAL ENVIRONMENT AND CLIMATE
OF THREE REPRESENTATIVE
TRADITIONAL COUNTRIES

Physical Environment and Climate	Peru	Syria	Tanzania
a) Which country is predominantly mountainous? (pp. 6-7)			
b) Which countries have a desert-like climate? (pp. 10-11)			
c) Which country has a tropical climate? (pp. 10-11)			
d) Which country has the greatest range in temperature from January to July? (pp. 12-13)			
e) Which country gets the least precipitation on a year-round basis? (pp. 14-15)			
f) Which country has a wet season and a dry season? (pp. 14-15)			
g) Which country has a great deal of precipitation throughout the year? (pp. 14-15)			
h) Which countries have a harsh climate?			

3. Check the appropriate maps in Goode's and determine whether the harsh climates of Peru, Syria and Tanzania are representative of most traditional countries. Can you find any exceptions?

4. Would you consider environmental conditions such as climate and landforms to be limiting factors in a country's ability to modernize? Explain.

5. Examine table 5.2 and answer the questions which follow.

TABLE 5.2

GENERAL CHARACTERISTICS AND SOCIAL FACTORS
OF THREE TRADITIONAL COUNTRIES

General Characteristics and Social Factors (1964-1967)	Peru	Syria	Tanzania
Land area (million square miles)	0.5	0.07	0.94
Land area useful for agriculture and animal husbandry (%)	23.7	68.9	49.6
Forest and woodland (%)	67.7	2.4	37.6
Waste (%)	8.6	28.7	12.8
Population (millions)	12.4	5.6	11.8
Life expectancy at birth (years)	53	na	37.5 (1957)
Infant mortality (per '000)	95	22.3	19.9
Crude birth rate (per '000)	44.5	33.4	26.0
Population per physician	1560	5110	18,240
Population per hospital bed	410	900	560
School enrollment: age 5-19 years (%)	68	50	21

a) While all three countries may be considered traditional, do you notice that any are more traditional than others?

b) Just how great is the difference between traditional countries and modern countries in terms of the various social factors?

6. Use table 5.3 to answer both parts of question six.

   a) Could you judge from only an analysis of table 5.3 that Peru, Syria and Tanzania are traditional countries? Why?

   b) What is the population growth rate of the three countries (use Goode's World Atlas)? To which country does the Malthusian Principle apply most (see table 5.3)?

TABLE 5.3

FOOD PRODUCTION, IMPORTS AND EXPORTS
OF THREE TRADITIONAL COUNTRIES

	Peru			Syria			Tanzania		
Food Production (1963-5 average)	Production	Exports	Imports	Production	Exports	Imports	Production	Exports	Imports
Cereals ('000 metric tons)									
Barley	183	-	16.0	704	285				
Corn	504	1	9.3	7	2	3	623	11	6
Potatoes	1600	-	-	43	1	16	260	-	-
Rice	302	-	47	1	-	28	106	-	2
Wheat	148	-	398	1111	134	8	24	-	3
Cassava	1478	-	16				1033		
Fruit									
Citrus	250	1		360	6	70	5	na	-
Non-citrus	-	-	20	70	1	22	270	-	1
Beverages, etc.									
Cocoa	3	-	1	-	-	-			
Coffee	52	39	1	-	1	3	38	30	-
Sugar	8500	428	-	163	-	74	860	1	9
Tobacco	1975	-	na	2772	-	-	1520	-	-
Animals and Products									
Chickens	21,825			4093			168		
Cattle	3,785	-	83	785	33	14	12,000	2	-
Goats, sheep, pigs	21,000	-	7	6000	420	377	7,200	5	-
Fish	7,886	1,456	1	na	1	4			
Milk	491	-	96	57	3	19			

7. Analyze table 5.4 to answer this question. Transportation and communication are fairly direct measures of accessibility. To what extent does it appear that the rural areas of these three countries have access to urban centers? How would that affect the ability of the entire country to modernize?

TABLE 5.4

TRANSPORTATION AND COMMUNICATION DATA
FOR THREE TRADITIONAL COUNTRIES

Transportation and Communication (1963-5 average)	Peru	Syria	Tanzania
Land area ('000 square miles)	496	186	937
City area and waste (%)	9	29	13
Population ('000)	12,385	5,600	11,877
Motor vehicles in use ('000)			
private	130	25	31
commercial	93	14	9
Railway track (miles per '000 square miles)	.003	.003	.003
Telephones (per '000 urban population)	1.2	1.6	0.2
Radios (per '000 population)	184	297	10
Television sets (per '000 population)	16	9	-
Daily newspapers (per '000 population)	47	15	3
Road density (see Goode's pp. 52-53)	low	low	low

8. The data in table 5.5 represents the employment pattern for Peru, Syria and Tanzania. While there is some variation in the employment patterns of traditional countries some generalizations can be made. What are these generalizations?

TABLE 5.5

EMPLOYMENT PATTERNS FOR THREE TRADITIONAL COUNTRIES

Employment Pattern	Peru	Syria	Tanzania
Distribution of working population	(1961)	(1965)	
Total working population ('000)	3,125	1,424	
Percentage in -			
Agriculture, forestry, fishing, and hunting	49.7	55.5	vast majority
Mining and quarrying	2.1	0.8	some
Manufacturing	13.2	11.6	some
Construction	3.4	5.5	
Electricity, gas water, and sanitary services	0.3	0.7	
Commerce	9.0	9.9	
Transportation and communications	3.0	2.9	
Services	15.3	11.9	
Others	4.0	1.2	

9. Use Goode's World Atlas, pages 47 and 50 and the data in table 5.6, to answer all parts of question nine.

   a) Are the three countries self-sufficient in terms of energy resources?

   b) What degree of industrialization is reflected in table 5.6, and in the data on pages 47 and 50 of Goode's World Atlas?

   c) Based on the extent of untapped energy sources and on the data in table 5.6, describe the prospects for the growth of industry in the three countries.

TABLE 5.6

ENERGY RESOURCES, IMPORTS AND EXPORTS
OF THREE TRADITIONAL COUNTRIES

1963-5 average '000 metric tons	Peru			Syria			Tanzania		
	Production	Exports	Imports	Production	Exports	Imports	Production	Exports	Imports
Coal	137	11	1	-	-	-	-	-	-
Electricity	3649			572			197		
Natural gas	600	-	-						
Oil, Crude	3153	370	93	-	-	970			
Petroleum, refined	2893	107	630	920	30	293	-	-	387

10. Read the appropriate pages in the textbook (refer to the study directory, page 194), examine the data in tables 5.7 through 5.10, and read the article, "The Geography of Underdevelopment in Kenya and Tanzania," that follows the tables, and then answer questions 10a through 10d on pages 213 and 214.

TABLE 5.7

ANNUAL AVERAGE GROWTH RATE
OF VALUE OF EXPORTS
AND IMPORTS

Annual Average Growth Rates of Value	1950-67	1960-67	1967-68
Exports			
World	6.9%	8.0%	11.1%
Modern countries	7.6	8.7	12.4
Traditional countries	4.1	5.0	8.0
Imports			
World	7.0	8.0	10.7
Modern countries	7.5	9.2	12.3
Traditional countries	4.3	5.0	6.4

Source: Handbook of International Trade and Development Statistics, United Nations Conference on Trade and Development (UNCTAD), 1969.

TABLE 5.8

SHARE OF MAJOR GROUPS OF COUNTRIES
IN TOTAL WORLD TRADE

Share of major groups of countries in total world exports	1950	1960	1968
Modern countries	60.8%	67.0%	70.5%
Traditional countries	31.2	21.3	18.2
Other (Communist) countries	8.0	11.7	11.3

Source: UNCTAD, 1969.

TABLE 5.9

INDICES OF UNIT VALUES OF IMPORTS AND EXPORTS AND TERMS OF TRADE

Indices of Unit Values of Imports and Exports and the "Terms of Trade"*(1968)	Import	Exports	Terms of Trade
Modern countries	101	108	110
Traditional countries	101	94	93

Source: UNCTAD, 1969. *Terms of trade refers to the relationship of the value of exports with the value of imports. 1955 is used as a base when the base had a value of 100. Thus the terms of trade have improved (by 10% for the modern countries).

TABLE 5.10

DEMAND FOR IMPORTS FROM DEVELOPING COUNTRIES

Economic growth in modern countries requires more imports from developing countries. This demand for imports from developing countries by modern countries varies from commodity to commodity as indicated below. For every one percent increase in the income of modern countries, the following demand is made on the importation of various commodities from developing countries (expressed as percent increase in imports from developing countries):

0.6 of foodstuffs
0.5 of agricultural raw materials
2.4 of fuels
1.9 of manufactured goods

Source: Malmgren, H. B., Trade for Development, Overseas Development Council Monograph, No. 4, 1971, p. 11.

THE GEOGRAPHY OF UNDERDEVELOPMENT IN KENYA AND TANZANIA:

AN OUTLINE FOR A GENERAL HISTORICAL MODEL*

The following is an attempt to outline in general terms the spatial evolution of underdevelopment in East Africa based not upon theoretical expectations but upon actual patterns and events. Although what is described refers directly to the Kenyan and Tanzanian contexts, with relatively minor modifications the same patterns and processes can be found elsewhere in Africa and in much of the rest of the Third World.

Early Colonial Phase: A period of colonial penetration during which effective administrative control is established (usually after significant indigenous resistance) and the basic spatial infrastructure of underdevelopment is implanted. Characteristic features include:

1. Locational selection based upon the strategic and exploitative objectives of the colonial power

   a) major basing points (e.g., coastal centers)

   b) lines of interior penetration

   c) interior centers for resource development and political control.

2. Development of a new distribution of locational advantage and productive potential based upon access to the selected paths of penetration and the political and economic needs of the resource and administrative enclaves.

3. Establishment of European/capitalist modes of production under the direct control (as in plantations) or indirect control (e.g., via monopolistic trading companies dealing with peasant cash crop producers) of a colonial elite.

Reproduced by permission from the Association of American Geographers Minicourse, "Geography, Development and Underdevelopment in East Africa," E. W. Soja, April 1975.

Locational and other decisions during this phase have tended to be remarkably persistent in their effects on the political and space economy of the territory. The spatial organization which began to emerge tended to reflect more directly the externally generated objectives of the colonial power than any attempt to respond to indigenously expressed developmental demands and potential.

Colonial Consolidation: A period of mobilization into dependency, when the exploitative social and spatial structure is effectively extended beyond the export enclaves to incorporate most of the population into the colonial economic system--and thereby into the capitalist world system. Key features here include:

1. The clear emergence of a local center-periphery structure to the space economy as evidenced by:

   a) the growth of primate cities through the agglomeration of foreign investment and the concentration of human and capital resources drained from the rest of the territory

   b) the organization of much of the remainder of the territory as a dependent periphery--as a market for the primate city's products (either locally produced or imported), and as a primary resource and labor pool for the major export enclaves

   c) the extension and elaboration of a dendritic transport network structured to serve external rather than internal markets

   d) the political fragmentation of space into regional subsystems (often based on ethnicity) whose interconnections are based mainly on the demands of the export economy

   e) the creation of a dependent stratum of administrative and commercial service centers to act as control and transmission points (with virtually no local economic base)

2. The solidification of a pattern of unequal exchange and monopoly control in the system of social relations between colonial elite and the masses. This generally involves a combination of such things as:

   a) expropriation of land

   b) forced subsidization of elite infrastructural services through mass taxation

   c) elimination of economic competition from indigenous agricultural producers through special customs and tariff regulations or through legal restrictions

   d) destruction of indigenous industry by cheap imports

   e) the maintenance of low wages regardless of labor supply

   f) the creation of food shortage due to use of land for export crops, rapidly increasing population, loss of ablebodied farmers to the wage economy, and the difficulty of inter-regional surplus exchange

   g) creation of dependent industries (limited linkage effects, capital intensive, biased against capital goods such as farm equipment and transport facilities, favoring certain luxury goods for small local markets, oligopolistic organizational structure, etc.)

The primary product of this phase is a space economy characterized by increasing regional inequalities and the concentration of wealth in only a few areas. Many regions experience absolute as well as relative decline in income and the colonial economy effectively coopts the independent peasantry into a dependence on externally determined commodity prices and the rural development policies of the colonial government.

Mature Colonialism and Neocolonialism: a period of regional, ethnic, and class conflict over rising social and geographic inequality. Also associated with new means of maintaining existing patterns of dependency and underdevelopment. Initially, conflicts focussed upon achievement of independence (which generally entails a transfer of authority without significant transformation of society). Later conflicts arise either from competition over centralized control or from disagreement over the degree of national disengagement from the international capitalist system. To the extent that disengagement is not achieved, this ongoing period is characterized by:

1. A fuller elaboration of a global hierarchy of centers and peripheries.

   a) the emergence of large, internationalized cities which act increasingly as primate centers for multi-national regions

   b) limited decentralization to permit the growth of a few regional centers, generally in major population and resource concentrations close to international boundaries

   c) the expansion of transport networks and services (e.g. port facilities) to improve international connectivity, especially with regard to internationalized cities

   d) infrastructural concentration on major corridors within the dendritic transport system (maintaining focus on primate city and export outlets). Little attention to inter-regional connections within national peripheries

   e) accelerated concentration of human and capital resources in primate cities (despite state policies of deconcentration and more equitable regional growth)

   f) some improvements in the regional distribution of public service investments, but concentrated at the lowest functional levels (primary schools vs. secondary schools, dispensaries vs. hospitals, etc.).

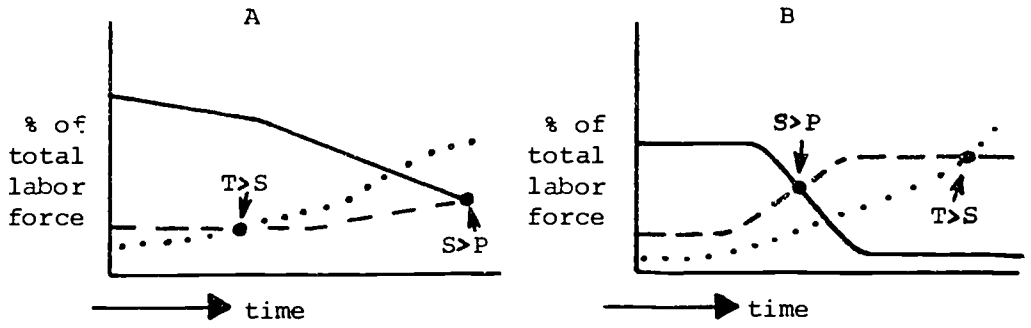
2. The strengthening of dependency under the guise of international development

   a) the growth of national planning organizations strongly influenced by development strategies originating in advanced capitalist countries, the World Bank, etc.

   b) adoption within the state of a capitalist conceptualization of development and inequality (e.g., "rich" and "poor" regions and ethnic groups, underdevelopment as a condition, development as diffusion, etc.)

c) Rapidly increasing technological dependency and growing importance of multinational corporations in the economy

d) a pattern of economic "involution" characterized by
---excessively high rates of urbanization compared to the expansion of the secondary sector and of employment
---increasing growth of the tertiary sector such that employment structure resembles the historical pattern shown if [sic] Figure A rather that [sic] Figure B (the conventional view of capitalist economic transformation.)



————Primary Sector------Secondary Sector·····Tertiary Sector

---rapid expansion of the "informal" sector, particularly in the primate cities, providing a convenient and cheap labor reserve whenever needed and a sponge for the absorption of "excessive" unemployment.
---stagnation of many rural areas and increasingly frequent food shortages.

e) political systems aimed at controlling instability and avoiding major social transformation, usually through a combination of increasingly authoritarian control and strong "populist" propaganda.

There are, of course, many national variations upon these themes, but the general pattern remains the same. Full participation in the international capitalist system means subjection to a global hierarchical structure in which the periphery persists in a dependent position of unequal exchange with regard to the center--at the international, macroregional, national, and subnational scales.

PLANNED SPATIAL CHANGE - PROGRAM OUTLINE

KENYA:

First Five Year Plan (1964):	Million Acre Settlement Scheme
Second Five Year Plan (1970):	Growth Centers and Physical Planning
Third Five Year Plan (1974):	The "Informal" Sector

TANZANIA:

First Five Year Plan (1964):	Villagization
Second Five Year Plan (1969):	Ujamaa vijijini Regionalization of planning Growth centers
Third Five Year Plan (1974):	Capital shift +?

10. (Continued)

a) Describe the trade relations that exist between modern and traditional countries. What accounts for these relations?

b) Describe the trade relations that exist among traditional countries. What are the reasons for these relations?

c) Describe and explain the position of peripheral areas within traditional nations in terms of the trade relations that exist between modern and traditional nations.

d) Briefly describe and explain in terms of trade:

(1) The relationship between the periphery of a traditional nation and the center within the same nation

(2) The relationship between the periphery of one traditional nation with those of other traditional nations

11. You should review the exercise on accessibility in unit four before beginning this exercise.

    You have already analyzed the accessibility characteristics of Peru, Syria, and Tanzania in exercise seven of this unit. Examine the data in table 5.4 and read the appropriate pages in your textbook (refer to the study directory). Then, answer the following:

    Low accessibility of rural areas to urban centers limits the ability of a country to modernize. List the consequences to the rural population of low accessibility.

12. a) Read the appropriate pages in the textbook regarding locally based economies and list the characteristics of that type of system.

b) What makes it so difficult for individuals in a locally based economy to improve their lot?

13. In an attempt to explore the dynamics of modernization--that is, the movement away from traditionalism and toward modernity--three countries with certain common or compensating characteristics have been chosen for analysis. These three include Israel (a modern nation), Lebanon, and Saudi Arabia (both traditional nations). The research question to be posed is: Why is it that three countries that possess either common or compensating characteristics are not at the same level of modernity?

Your analysis of these countries will concentrate on five areas: environment, population, resource development, industry and trade, and social technology. Social technology refers to those factors that improve the individual's status exclusive of economic factors. These social factors would include education, health care, availability of electric energy and so on. A philosophic analysis of cultural dispositions will also be included.

a) First, complete the chart below with the aid of the maps in Goode's World Atlas designated in parentheses. This will constitute your analysis of the environment. To fill out this chart, you should rank each country according to the environmental factor provided. Thus, in terms of land area, Saudi Arabia ranks first (most land area), while Israel and Lebanon rank second (they each have similar small areas). A rank of "1" would indicate an advantage to the country in question. Thus, a larger land area implies a greater probability of the existence of natural resources. However, the other side of the coin must also be kept in mind. Thus, when land area becomes too great, it is very difficult to ensure accessibility of the rural areas to the urban areas. If you cannot determine whether a factor is an advantage or a disadvantage you should refer back to units three and four. If you think two countries are similar give them a tie rank.

TABLE 5.11

ENVIRONMENTAL FACTORS

Environmental Factors	Saudi Arabia	Israel	Lebanon
Topography (pp. 8-9)			
Climatic regions (pp. 10-11)			
Temperature (pp. 12-13)			
Precipitation (pp. 14-15)			

TABLE 5.12

RESOURCES PRODUCTION, EXPORTS AND IMPORTS
OF SAUDI ARABIA, ISRAEL AND LEBANON

Resources	Saudi Arabia			Israel			Lebanon		
	Production	Exports	Imports	Production	Exports	Imports	Production	Exports	Imports
Cereals									
Total ('000 metric tons)	206	-	302	920	10	663	161	34	319
Fruit									
Total ('000 metric tons)	358	4	38	1126	519	1	580	183	10
Beverages									
Coffee, sugar, tea	-	-	62	303	-	91	65	-	58
Softwood & hardwood	-	-	na	45	-	720	36	10	210
Livestock									
Poultry				7217			11923		
Cattle	67	-	7	350	-	2	102	-	123
Goats and sheep	5056	8	308	350	-	-	548	2	731
Butter, cheese, eggs	10	-	3	93	10	20	16	4	8
Milk	4	-	38	336	-	82	9	-	49
Fuel and Power									
Electricity (million kwh)	149			3643			694		
Oil, crude	89293	75020	-	183	-	2960	-	-	1270
Petroleum, refined	13900	10367	67	3120	460	360	1226	143	67
Metals	na	na	na	Virtually none except copper			Virtually none	-	51
Chemicals and Fertilizer	na	na	na	751	222	91	-	-	16

TABLE 5.13

INDUSTRIAL AND TRADE DATA
FOR SAUDI ARABIA, ISRAEL
AND LEBANON

Industry and Trade	Saudi Arabia	Israel	Lebanon
Energy consumption per capita (million metric tons of coal equivalent - 1973)	900	2,712	889
G.N.P. per capita ($U.S.)			
1966	240	1,160	408
1969	380	1,570	580
Exports (in million $U.S.)			
1955	561	89	34
1965	1,389	406	85
1972	(1971)3,845	1,102	(1971)256
Imports (in million $U.S.)			
1955	186	334	218
1965	(1966) 517	814	482
1972	(1971) 806	1,952	(1971)677
Distribution of Trade (percentage of total value 1955/1965)			
Exports			
Manufactured goods	na	54/60	36/29
Food	na	41/25	44/33
Chemicals	-/-	2/6	na
Fuels	na/100	na	19/11
Imports			
Manufactured goods	na/54	42/62	49/27
Crude materials and fuels	na/3	31/19	20/12
Food	na/28	22/11	27/23
Chemicals	-/-	4/5	4/4

TABLE 5.14

DEMOGRAPHIC AND SOCIAL TECHNOLOGY DATA
FOR SAUDI ARABIA, ISRAEL,
AND LEBANON

Demographic and Social Technology	Saudi Arabia	Israel	Lebanon
Total population (1973, million)	7.24	3.12	2.13
Population growth rate (annual)	2.8	2.9	3.0
Expectation of life at birth (female, 1973)	42.3	70.1	na
Hospital (population per bed, 1973)	1140	170	260
Energy consumption per capita (million metric tons of coal equivalent, 1973)	455	2,712	889
Telephones per 100 population (1973)	1.9	19.4	7.7
Infant mortality (per '000, 1965)	na	27.4	na
Population per physician (1965)	13,000(1964)	410	1390
School enrollment: age 5-19 years (% 1963-4)	12	83	78
Mail per capita (1963-5 average)			
domestic	na	67	7
foreign received	na	14	15
foreign sent	na	12	10
Radios (per '000 population, 1963-5 average)		271	1.3
Daily newspapers (per '000 population, 1962-3)	2.4	146	97
Employment (% of work force, 1967)			
Agriculture, forestry, fishing, hunting	primarily agricultural	12.5	primarily agricultural
Mining, quarrying, manufacturing		24.5	
Construction		10.1	
Energy, water, sanitation		1.7	
Commerce		12.1	
Transportation, communications		6.6	
Services		28.7	
Others		3.8	

TABLE 5.15

ACCESSIBILITY DATA FOR SAUDI ARABIA, ISRAEL AND LEBANON

Accessibility	Saudi Arabia	Israel	Lebanon
Motor vehicles in use ('000s; 1963-5 av.)			
Private	44.8	62.7	86.4
Commercial	36	35.2	12.7
Railway track (miles of track per sq. mile of land)	na	.054	.067
Mail per capita, domestic	na	67	7
Telephones (per '000 urban population)	0.4	11('67)	4.8
Radios (per '000 population)	na	271(63-5)	113
Daily newspapers (per '000 population)	2.5	145.5(62-3)	97
Road density	low	high	medium
Land area (sq. miles)	810,000	7,992	3,400

Tables 5.12 through 5.14 provide data for five factors. Use that data and the data from table 5.11 to answer the questions 13b to 13c.

13. b) Answer the questions in the following chart by placing a check mark in the appropriate column. Use tables 5.12, 5.13, 5.14, and 5.15 and the appropriate maps from Goode's World Atlas.

	Saudi Arabia	Israel	Lebanon
I. Agriculture			
A. On a per capita basis, which country has the greatest agricultural production?			
B. Which country seems to be self-sufficient in food?			
C. Do any of the countries appear to be major food exporters?			
D. Are any of the countries ever likely to be self-sufficient in food?			
II. Minerals and Energy Resources			
E. Which country has a surplus of oil production?			
F. Which countries must import large quantities of crude oil?			
G. Do any of the countries appear to have large quantities of minerals (including chemicals and fertilizer)?			

	Saudi Arabia	Israel	Lebanon
III. Trade and Industry			
H. Which country has the most advantageous balance of payments?			
I. Which country has the greatest amount of trade?			
J. Which country, on the basis of trade data, seems to be most active in industry?			
IV. Accessibility			
K. Which country's rural areas are least accessible to urban centers?			
L. In which countries are innovations most accessible to the rural populace?			
M. On the basis of accessibility, rank the countries with respect to their potential for increasing modernization ("1" = most potential).			
V. Social Technology			
N. Which country's population seems to have the best health care?			
O. Rank the countries in terms of their interactions with other countries ("1" = most interaction).			
P. Which country has an employment pattern most representative of modern patterns?			
Q. Which country is most mechanized?			

13. c) Based on your analysis of the three countries answer each of the following:

(1) Which two are most similar and should be at the same level of modernization? Are they at the same level?

(2) Considering the trade revenue derived from oil, do you think that this could become a factor which might compensate for the poor environmental and agricultural condition of Saudi Arabia?

(3) Lebanon and Israel have much in common. While Saudi Arabia is characterized by many negative factors, its oil revenues might be considered as a compensating factor, but only Israel is a modern nation. What factor(s) have we not considered that might contribute to the differences in degree of modernization between Israel and Lebanon and Saudi Arabia? Explain how this factor(s) account for the disparity.

(4) What proposals would you make for initiating a trend of modernization in Lebanon and Saudi Arabia? For the present purposes assume that your proposals would not be frustrated by political bickering.

14. Most of your efforts in this unit have centered around the discovery of a number of generalizations based, in many cases, on outdated data. Reprinted here are excerpts from recently published textbooks and journal articles concerning the underdevelopment and modernization of the Third World.

a)*

"(3) The structure of the world economy favors a continued increase in the gap in incomes and economic growth between underdeveloped and developed countries. A distorting economic system operates both within and among countries, underdeveloped and developed alike. Terms of trade will continue to worsen for the underdeveloped world.

"(4) The Third World is now peripheral, and the role it plays in the world economy as the supplier of primary products, strongly suggests that it will remain so, despite the phenomenal growth of cities in underdeveloped countries.

Reproduced by permission from the Association of American Geographers' Commission on College Geography Resource Paper Series, #28, "Underdevelopment and Modernization of the Third World," A. R. de Souza and P. W. Porter. 1974.

"(5) Things diffuse most widely and are adopted most fully when they are single units, not encumbered by being part of a system. Things which diffuse as part of the modernization process are often complex integrated entities. One must usually adopt all or nothing. The Green Revolution, with its requirements for irrigation, mineral fertilizers, and other technical inputs, is an example.

"(6) The city does not benefit its hinterland. The city, particularly the mercantile city, demands more of the hinterland than it gives in return. Further, the hierarchy of urban centers cannot be counted on to be the mediator of change, diffusing to villages and rural farmsteads the elements of organization and infrastructure which make rural development possible.

"(7) Third World cities are growing but not developing. The growth of tertiary service employment at high rates as industrial employment increases slowly indicates an urban involution, with underemployment and a reciprocal sharing by the poor of their poverty.

"(8) The managerial elites in independent underdeveloped countries are, with rare exceptions, perpetuating colonial arrangements with the former mother country and with foreign companies which have local investments. In so doing they further, increase class and economic distinctions within their country. Fanon's prediction of the rise of an African bourgeoisie is confirmed.

"(9) Social and economic institutions of indigenous people should not be dismissed out of hand as inefficient, to be replaced by modern ones. Indigenous systems can be bases on which to build.

"(10) The knowledge local people have is a foundation for development. The local people know many things of which planners need to be aware. They know themselves, what they want, and in what ways they will be willing to cooperate. They know a great deal about the environment wherein they live, and can often tell whether a given developmental proposal would work or not in an area.

"(11) The Tanzanian development process, with its emphasis on decentralization, self-help, and *ujamaa*, is rural;

and social and economic change, embodied in the idea of *ujamaa*, is intended finally to spread a human-oriented concept of development to the urban areas."

b)*

"First, and perhaps most important, underdevelopment (however defined) is seen not simply as a static condition or symptom but as a dynamic process. . . . Second, growth is far from synonymous with development and equally neither are synonymous with modernization. . . .

"The Meaning of 'Development'.

What is meant by development? Development has hitherto too simplistically been regarded an economic phenomenon. As a minimum it is a higher GNP, but it is also greater 'self-respect' (independence of action etc.) and more satisfactory nutritional standards. Clearly Gross National Product per capita is easiest of all indicators to measure. But growth as a booming GNP may merely result in an increased concentration of income in the hands of an urban minority, the growth of overt unemployment, great rural-urban disparities, and so on. Development suggests the relief of poverty (especially malnutrition) and a movement towards the reduction of inequalities. Enough food is a prime demand. Recent research has shown the nutritional shortages in children can cause lasting impairment, not only of body, but also of mind; yet, conventionally, nutrition is seen not as a development problem but as a welfare problem. Another basic necessity is employment, or other productive use of labor (including alternative acceptable roles such as studying or housekeeping. Both poverty and unemployment are associated with per capita income, the direct link between them being income distribution, and it is a truism that poverty will be eliminated much more rapidly if, and only if, economic growth is associated with a declining concentration of income. However equality should be considered as an objective in its own right.

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*John Connell, "The Geography of Development or the Development of Geography," Antipode: A Radical Journal of Geography 5, No. 2 (May, 1973): 27-39. By permission of Antipode.

"The 'Green Revolution'

The 1960's have been described as the decade of the Green Revolution. Emerging in Mexico, new seeds rapidly became important in South and South East Asia; the implications of the term are redolent of massive changes and some of those changes are indeed massive. In Asia new seeds covered 200 acres in 1964-5 and 34 million acres in 1968-9; new wheat varieties gave an average 77% higher yield than old ones, and new rices mature in 120 days instead of 150-180 days, giving additional opportunities for multiple cropping. One result is that the Philippines, for example, has ended half a century of dependence on rice imports to become an exporter; and so on. Yet, despite these successes, there are problems which are seen especially in the more researched Indian context; the new strains are disease-prone, there are problems of fertilizer supply (since the new strains demand much more), fertilizer pricing and of irrigation supply. Finally, there are problems of availability of the necessary credit to make the required parallel investments in tube wells and fertilizers. The nature of these particular problems indicates the nature of the general problem; especially in India the benefits of the Green Revolution are confined to the larger and (already) richer farmers. Small peasants and landless laborers are effectively excluded from the gains, because of the inadequacy of credit supply (and their consequent inability to invest in the necessary technology) and because of their small (or absent landholdings). Inability to maintain a price support policy results in a glut on markets and falling prices whilst mechanization results in diminished employment prospects. There is strong evidence that regional disparities are increasing, with irrigated areas advancing and dry areas languishing; in short, traditional economic inequality, at least in rural India, is increasing much faster than can be justified by the population increase. Furthermore the Green Revolution is resulting in increased capital-intensive farming and accelerating the concentration of land ownership, thus counteracting postwar land reforms.

"Land Reform

Land reform in the form of redistribution of land and a greater equalization of landholdings (coupled often with a reduction in fragmentation) is common to most LDCs [less developed countries] and many other countries. . . .

[In many areas] (Chile and Italy for example) repeated attempts at land reform have not produced a situation which is considered satisfactory; even at government level most land reforms have brought economic advantages in terms of increased production and greater intensity of land use, yet considerable social disturbance. The major difficulty in many areas is not that of solving the problem of tenancy but of finding farms for the landless; landless laborers are inevitably the worst-off sector of most rural economies. A result of land reform has often been increased unemployment as a result of mechanization on larger, more economic holdings and a resultant decline in the demand for labor; increased migration to urban slums or, in exceptional circumstances in some villages, a return to transhumance, are other outcomes. . . . Although the cases of both land reform and the Green Revolution suggest that there have been revolutionary changes in the way that peasants live, there have been less than revolutionary changes in the way society is structured as regards power, resources and mobility. The old dominant groups (notably the landlords) have used their power to employ, to lend, and to rent out land and to capture the new institutions, co-operatives, credit sources and local authorities. This imposes two constraints on the growth of farm output: firstly, the decline of traditional security systems has preceded the development of modern ones, reducing the peasants' ability and willingness to take risks; secondly, the structure of rural ownership introduces a variety of resource-misallocating devices--credit monopolies, reluctance to consolidate holdings and a slow rate of transfer of labor and land to the uses where they have the greatest comparative advantage. Of local variations in these changes and constraints, however, we know very little.

"Problems of Nutrition and Health in LDCs

Even more basic than income and employment are nutrition and health. . . . Both disease and malnutrition are serious problems in many LDCs. . . . The poor are sicker and the sick are less able to do anything about their poverty; the critical problem is that of breaking the cycle of ignorance, poverty and illness. There is little evidence that this is happening. . . ."

c)*

". . . . • In the long run, the most important issue is effective population planning. Its goal must be to stabilize the planet's population several decades earlier--and at a figure several billions lower--than it would otherwise be stabilized.**

" • Since reducing birth rates to replacement levels will necessarily require decades, we must reshape development programs now, in order to take account of what is certain to be a continuing, rapid growth of population to levels heretofore considered unlikely. Two of the consequences of such growth--widespread malnutrition and chronic and growing unemployment--require particular attention.

" • It is clear that malnutrition prevents realization of the full genetic potential of hundreds of millions of persons in the developing world and retards both economic and social development. But research has pointed out feasible means to make immediate progress on this neglected problem.

" • The problems of unemployment and underemployment are already severe and will become worse as the rate of growth of the labor force accelerates in the two or three decades ahead.

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*Robert S. McNamara, "Major Development Problems: Malnutrition and Urban and Rural Unemployment," in One Hundred Countries, Two Billion People (New York: Praeger Publishers, 1973) pp. 48-70 By permission of the International Bank for Reconstruction and Development, Washington, D. C.

**Recent demographic studies indicate that if a net reproduction rate of one (an average of two children per couple) is reached in the developing countries by the year 2040, a possible but by no means certain achievement, their present population of 2.6 billion will increase more than five fold to nearly 14 billion before it levels off. If the net reproduction rate of one could be reached two decades sooner, the ultimate size of the population of the developing countries alone would be reduced by over 4 billion, a figure substantially in excess of the planet's total population today.

(Footnote continued on the next page.)

" • Poverty, inequality, and unemployment cannot be effectively dealt with by expanding the urban sector alone but must be attacked directly in the rural areas through measures which will raise the incomes of the poorer farmers and the landless.

. . . . . .

"Today, in the developing world:

"*Malnutrition is common.*

The Food and Agriculture Organization estimates that at least a third to a half of the world's people suffer from hunger or nutritional deprivation. The average person in a high-standard area consumes four pounds of food a day as compared with an average pound and a quarter in a low-standard area.

"*Infant mortality is high.*

Infants deaths per 1,000 live births are four times as high in the developing countries as in the developed countries (110 compared with 27).

"*Life expectancy is low.*

A man in the West can expect to live 30 per cent longer than the average man in the developing countries and twice as long as the average man in some African countries.

	Developed Countries	Developing Countries	Total World
Present Population (in billions)	1.1	2.6	3.7
Ultimate Population (in billions)			
If replacement rate is reached by developing countries in 2040 and developed countries in 2020	1.8	13.9	15.7
If replacement rate is reached two decades earlier	1.6	9.6	11.2

(Footnote continued on the next page.)

"*Illiteracy is widespread.*

There are 100 million more illiterates today than there were twenty years ago, bringing the total to some 800 million.

"*Unemployment is endemic and growing.*

The equivalent of approximately 20 per cent of the entire male labor force is underemployed or unemployed, and in many areas the urban population is growing twice as fast as the number of urban jobs.

"*The distribution of income and wealth is severely skewed.*

In India, 12 per cent of the rural families control more than half of the cultivated land. In Brazil, less than 10 per cent of the families control 75 per cent of the land. The gap between the per capita incomes of the rich nations and the poor nations is widening rather than narrowing, both relatively and absolutely. At the extremes that gap is already more than $4,000. Present projections indicate it may well widen to $9,000 by the end of the century. In the year 2000, per capita income in the United States is expected to be approximately $10,000; in Brazil, $500; and in India, $200.

. . . . . .

"Malnutrition is in fact widespread. It is a major cause of high mortality among young childern. It limits the physical, often the mental, growth of hundreds of millions of those who survive and reduces their productivity as adults. Malnutrition is therefore a major barrier to human development. Yet, despite the evidence that with a relatively small per capita expenditure of resources major gains can be achieved, there is scarcely a country in the developing world where a concerted attack on the problem is under way.

Two important conclusions can be drawn from the above projections: Each decade of delay in addressing the population problem in developing countries will lead to an ultimate population in those nations approximately 20 per cent larger than would otherwise be the case; even on very favorable assumptions, the populations of the developing countries will continue to grow rapidly for several decades, expanding perhaps fourfold from present levels and reaching a total of nearly 10 billion.

"The number of childhood deaths is enormous in the poorer countries. Malnourishment severely lowers immunity to infection, and tens of millions of children succumb each year to preventable fatalities simply because they have no reserves of resistance. The Food and Agriculture Organization states that "malnutrition is the biggest single contributor to child mortality in the developing countries." That contention is borne out by the Pan American Health Organization's reports of studies in Latin America that show malnutrition to be either the primary cause of--or a major contributi factor in--50 to 75 per cent of the deaths of one- tc ır-year-olds.

"How great is child mortality in typical countries in the developing world?

" • In India, there are large areas where deaths in the first year of life number as many as 150 to 200 per 1,000 live births.

" • In Egypt, the proportion of children between the ages of one and two who die is more than 100 times higher than in Sweden.

" • In Cameroon, children under five, although only one-sixth of the population, account for one-half of the deaths.

" • In Pakistan and Bangladesh, the percentage of children between the ages of one and four who die is forty times higher than in Japan.

"Clearly, the principal result of widespread malnutrition is high child mortality.* But not all malnourished children die. Hundreds of millions of those who live (and the Food and Agriculture Organization and the World Health Organization estimate that as many as two-thirds of all surviving children in the developing countries have been malnourished) suffer serious deprivation of the opportunity to realize their full human potential.

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*It is becoming clear that the population problem and the nutrition problem are closely intertwined. In the end, better nutrition will have a beneficial effect on reducing fertility, despite the short-run reduction in infant mortality. Indeed, many authorities believe that reduced infant and child mortality are preconditions for successful population control.

"The deprivation often begins before the child is born. While it is difficult to distinguish the effects of protein deficiency on child development from other aspects of poverty in the child's environment, there can be no serious doubt that there is a relationship between severe malnutriton [*sic*] in infancy and mental retardation (which more and more scientists are concluding is irreversible). Autopsies have revealed that young children who die of protein-calorie malnutrition may have less than half the number of brain cells of adequately nourished children in the same age group. Protein deficiency also limits physical growth to a serious extent. The director of the National Institute of Nutrition in India reports that 80 per cent of the nation's children suffer from "malnutrition dwarfism." Low-income populations almost universally have smaller body size. The Food and Agriculture Organization estimates that more than 300 million children from these groups suffer grossly retarded physical growth.

"Prolonged into adulthood, the poor mental and physical growth characteristics of the early years can greatly impair the range of human capacities. Add to that the current low standards of nutrition for grown adults in much of the developing world, and it is clear why there are adverse effects on the ability to work. Workers who are easily fatigued and have low resistance to chronic illness not only are inefficient, but help substantially to increase the accident rate, the incidence of absenteeism, and unnecessary medical expenditures. More serious still, to the extent that their mental capacity has been impaired by malnutrition in childhood, their ability to perform technical tasks is reduced. Dexterity, alertness, initiative--these are the qualities that malnutrition attacks and diminishes."

PRACTICAL EXERCISES KEY

1.

Physical Environment and Climate	Peru	Syria	Tanzania
a) Which country is predominantly mountainous?			
b) Which countries have a desert-like climate, at least along the coast			
c) Which country has a tropical climate?			
d) Which countries have the greatest range in temperature from January to July?			
e) Which country gets the least precipitation on a year-round basis?			
f) Which country has a dry season?			
g) Which country has a great deal of precipitation throughout the year?			
h) Which countries have a harsh climate?			

2. You should notice that virtually all <u>modern</u> nations lie north of the Tropic of Cancer. Australia and New Zealand which are in the southern hemisphere (10° to 46°s.) are virtually the only exceptions to the rule. Most underdeveloped nations lie between 30° north latitude and 30° south latitude.

   While it is of no apparent relevance to the discussion, you might have noticed that the vast majority of the land masses lie in the northern hemisphere!

3. Two major types of climates are representative of most traditional nations: desert and tropical. Western Peru has, for the most part, a desert-like climate which is typical of such other traditional nations as the United Arab Republic, Pakistan, the countries of North Africa and south west Africa. Tanzania has a tropical climate which is also shared by such traditional nations as Brazil, the nations of central Africa, India, the nations of south east Asia, and the nations of the south Pacific.

   Syria is composed of two climates: a dry desert-like climate, and a mediterranean climate. The latter type is not particularly harsh and is typical of most countries bordering on the Mediterranean Sea. Thus while modernization seems to be limited for its eastern areas, Syria's western land should be productive.

4. Harsh climates and difficult landforms do constitute a limiting factor in a country's efforts to modernize. It is possible for modern technology to overcome many of the hardships resulting from harsh climates and landforms, however there is a cost factor involved. Irrigation systems, for example, are incredibly expensive, and while they may help to overcome dry climates, there does not seem to be any viable method of overcoming the problems inherent in tropical areas.

   Furthermore, landforms such as mountains pose apparently insurmountable difficulties. Unless resources such as lumber or minerals can be extracted, these areas are generally waste.

5. a) It is difficult to determine the relative degree of traditionalism of each country. While one may be less traditional in some areas, it may be more traditional in others.

   b) To say that the conditions between traditional and modern nations is great would be understating the situation. For example, examine the chart at the top of the next page.

Social Factors (1965-66)	Canada	Tanzania
Life expectancy at birth	71(1960-62)	37.5(1957)
Infant mortality (per '000)	23.6	19.9
Population per physician	820	18,240
Population per hospital bed	90	560
School enrollment: age 5-19 years (%)	82	21
Crude birth rate (per '000)	21	37
GNP per capita ($U.S.)	2240	80

6. a-b) On the basis of table 5.3, it might be concluded that the three countries are largely self-sufficient in terms of food needs. Thus, there are relatively few imports. On the other hand there are even fewer exports. So, while the countries may be self-sufficient, there are few surpluses.

   The three countries have relatively high rates of population increases (Peru and Syria, greater than 3%; and Tanzania, about 2%-3%). At least in the cases of Peru and Syria, there has arisen the necessity to continually increase the amount of food that is imported (data is unavailable for Tanzania). At the same time production has increased but not enough to keep up with an increasing population. Thus, the Malthusian principle does apply, and ultimate disaster can only be avoided, under the present status quo, as long as food imports can be obtained.

7. Transportation (auto, truck, and rail) to the rural areas of these countries is quite limited. Further, communications (telephones, radios, televisions, and newspapers) are not so prevalent that communication is effective. It is important to note that most of the transportation and communication data is largely (and unproportionately) contributed by the urban populace. Thus, the road and rail densities, and forms of communication are severely limited in rural areas.

   Inefficient transportation and communication inhibits the spread of modern technology as it applies to medical care and to agriculture. It restricts the spread of the modern "culture" and with it the motivation to modernize. It makes the transportation of locally-produced foodstuffs to urban

areas expensive and time consuming. Consequently, local production is generally consumed locally. In the absence of the revenues that might otherwise result from sales to urban and foreign areas, local areas are destined to remain tradition-bound.

8. The generalizations that can be derived from this data are very similar to those in unit four. The most traditional nations are primarily agricultural. In such cases there are more than a simple majority of the population employed in agriculture: usually there are 60-70% so employed. As a country becomes less traditional, industry's needs for employees increase, which means that, with improved technology, less people are employed in agriculture as the proportion in industry increases. With greater industrialization comes greater urbanization. That in turn creates a need for services such as an enlarged government bureaucracy and private services.

9. a) From the data in table 5.6 it would be concluded that at in terms of oil, natural gas, and coal, none of these countries is self-sufficient. It should be noted that the data (table 5.6) is not clear for Peru which is a relatively high producer of energy resources.

The map on page 47 of Goode's World Atlas provides an interesting reflection on the production, use, and undeveloped potential of water power. From that map, it does not appear that Syria has any potential water power. Tanzania has a potential of 100 million kilowatts and Peru has a potential of 50 million kilowatts. While Peru has developed some of that potential (about 5%), Tanzania's potential has not been tapped at all.

It must be concluded that while the amount of water power available to Peru and Tanzania is limited and may not support heavy industry, it might be employed to a greater extent to supply the needs of light industry. Certainly this source of cheap energy is not being employed, and its use would only help to improve the status of the people. Of course, it must be acknowledged that the initial development cost for hydroelectric power reservoirs and machinery becomes a very significant investment.

b-c) One could only conclude that heavy industry is the exception in these three countries. Such industrialization requires extensive energy resources that are not available to any of the countries. The untapped energy sources (water power) of Peru and Tanzania could be used to supply the needs of light industry. Syria is in a very unfortunate situation since it has few sources

of energy (pp. 48-49 in Goode's), and it has no apparent sources of water power. The conclusion is that it has little native resources to use in increasing its level of industrialization.

10. a) Trade relations between modern and traditional countries:

Traditional nations supply raw materials and cheap labor for the modern nations. Agricultural products that grow particularly well in various traditional countries form the bases for their exports. Recently, the suppliers of many raw materials have decreased in the modern nations, and now modern nations import these materials from traditional nations. Finally, modern nations have learned that it is more profitable to manufacture products in traditional nations where labor is cheap and then import them and sell them within the modern nations.

The article by Soja clearly describes the historical context of these trade relations. Basically, traditional nations constitute a source of relatively inexpensive materials. Since they have not cooperated among themselves to determine fair prices, the trend continues.

b, c, and d) Traditional countries do not ordinarily trade among themselves. A nation with a locally based economic system has few needs outside of food. It has little industry, primitive agriculture, and consequently little cash reserves. Thus, the movement of goods is from the traditional periphery areas to the traditional centers and then on to the modern countries.

Thus, the relationship between periphery areas and center areas of traditional nations is one in which the flow is outward, similar to the flow of goods between traditional and modern nations. This in no way implies that accessibility between peripheries and centers is adequate. Accessibility implies more than the physical existence of roads and railways. Periphery areas are no more than exploited producers whose ability to improve is constantly frustrated.

There are virtually no lines of communication between peripheral areas of different traditional nations. Each has a locally-based economy which only permits exports. These exports do not fetch high prices and therefore the ability to import products is generally limited to foodstuffs.

You should have noticed the following from the tables:

(1) Traditional nations lag far behind modern nations in the degree to which the value of products traded has increased. As we indicated exports of traditional nations are inexpensive.

(2) The volume of exports of traditional countries has declined between the years 1950 and 1968. Many products which they had exported have been replaced by synthetic materials. The trend, however, may change as modern nations run out of locally extracted raw materials.

(3) Most interesting is table 5.10. It would appear that agricultural traditional nations will continue to fall further behind modern nations. The future of the Third World seems to lie in those nations whose industrial capacity is growing and in those who possess reserves of increasingly expensive fuels.

11. A cautionary note should be heeded in this discussion on accessibility: the improvement of transportation and communications networks does not bring about an instantaneous movement toward modernization. While these improvements provide the potential for modernization, the local population must be willing to utilize these facilities. This takes time and a concerted government program of re-education.

Years of inaccessibility results in the following problems:

a) Little dissemination of modern innovations in agriculture

b) Poor medical facilities and other social services

c) Limited trade potential

These problems create many symptoms of traditionalism: undernourishment, overpopulation, a locally-based economy, poverty, and so on.

12. a-b) A locally based economy is one in which everything that is grown, extracted from the ground, or manufactured is consumed locally. Ramkheri is an excellent example of such a system.

The major drawback to such a system lies in its inability to generate cash that can be used for trade. Generally the locally based system relies on animate sources of energy resulting in a very limited agricultural production. With little left to sell there is limited opportunity to buy those innovations that may be used to improve production.

Thus results a vicious circle which is difficult to break: the farmer produces little and has little to sell; he, therefore, has little money to purchase agricultural innovations; without these innovations his level of production will continue to be low; finally, with a low level of production he and his family become the major consumers and he has little to sell.

13. a)

Environmental factors	Saudi Arabia	Israel	Lebanon
a) Topography	1	2	2
b) Climate	3	1	1
c) Temperature	3	1	1
d) Precipitation	3	1	1

It is apparent that Israel and Lebanon are similar in terms of environmental factors. They both have a Mediterranean climate with similar temperature and precipitation. Their topography, characterized by low rolling mountains and wide valleys, is also similar. Saudi Arabia has a much more harsh climate, although its topography (plains and lowlands) works to its advantage.

13. b.

	Saudi Arabia	Israel	Lebanon
I. Agriculture			
A. On a per capita basis, which country has the greatest agricultural production?	3	1	2
B. Which country seems to be self-sufficient in food?	no	no	no
C. Do any of the countries appear to be a major food exporter?	no	no	no
D. Are any of the countries ever likely to be self-sufficient in food?	no	no	no
II. Minerals and Energy Resources			
E. Which country has a surplus of oil production?	✓		
F. Which countries must import large quantities of crude oil?		✓	✓
G. Do any of the countries appear to have large quantities of minerals?	no	only chemicals and copper	no
H. Which country has the most advantageous balance of payments?	✓		
I. Which country has the greatest amount of trade?		✓	
J. Which country, on the basis of trade data, seems to be most active in industry?		✓	

	Saudi Arabia	Israel	Lebanon
III. Accessibility			
K. Which country's rural areas are least accessible to urban centers?	✓		
L. In which countries are innovations most accessible to the rural populace?		✓	✓
M. On the basis of accessibility, rank the countries with respect to their potential for increasing modernization.	3	1	2(1.5)
IV. Social Technology			
N. Which country's population seems to have the best health care?		✓	
O. Rank the countries in terms of their interactions with other countries.	3	1	1
P. Which country has an employment pattern most representative of modern patterns?		✓	
Q. Which country is most mechanized?		✓	

13. c)

(1) Israel and Lebanon share many similar characteristics. They share factors which affect them positively and negatively. One might then conclude that they should be at the same level of modernization. As the data indicated, Lebanon lags behind Israel in its efforts to be a modern nation.

(2) There is little doubt that, given appropriate economic and social management, oil revenue could, at least, help to overcome some of the effects of Saudi Arabia's poor environmental and agricultural conditions. However, such compensation depends on the desire of the country's leadership to devote all of its efforts and resources toward such an end. The revenues from oil are great, and if they are not used wisely now the oil will have been depleted before it can be of any value to the average persons in Saudi Arabia.

(3) It would appear that only two major factors account for this disparity. One is foreign aid in the form of private contributions and foreign government aid, and the other is culture.

Foreign aid should be quickly discounted. Hundreds of millions of dollars have been given to many traditional countries with no apparent resulting movement toward modernization. Very often their funds are used up by administrative costs, illegal (or at the very least, unethical) practices, with a smaller amount being funnelled to the primary need.

Culture seems to be the major difference. This is not meant to be disparaging of the Arab nations; however, one must concede that the immigrants who have come to Israel over the last fifty years were products of modern, or modernizing nations (England, France, Germany, Poland, Austria, and so on). They were literate and highly skilled in a wide variety of professional and technical areas.

As a contrast, the cultural history of Lebanon and Saudi Arabia is one of illiterate peasants engaged in a locally based economy with a handful of rich bureaucrats, princes, and so on overseeing and maintaining the system.

Such a system has harbored illiteracy, outdated agricultural and industrial technology, a peasant class, a very small middle and even smaller upper class, inadequate social institutions, and an apparent disinterest in social reform.

(4) If political considerations are not to be taken into account, the following list of items must become a part of the plan for modernization:

-an educational system which would virtually eliminate illiteracy and dramatically increase the proportion of highly skilled professional and technical individuals

-a program of adult education to up grade the technical skills of adults, such as farmers, who are such an important ingredient in the modernizing process

-a program of mass investment in agricultural technology and research

SELF-DIAGNOSTIC TEST

1. From the list below, select those statements that are characteristic of traditional societies.

   a) Most trade is internal.
   b) Most trade is with other nations.
   c) A balance of trade is characteristic of each traditional nation.
   d) All traditional nations have climates and other environmental and topographical conditions that are much harsher than those of modern nations.
   e) Harsh environmental conditions limit the extent to which a nation can modernize.
   f) Probably, the most negative factors are those related to social technology.
   g) Population growth is high.
   h) Imported food makes up the difference between what is needed and what is produced.
   i) The accessibility of rural areas to urban centers is usually difficult.
   j) There are about an equal number of people employed in agriculture and industry.
   k) The lack of energy reserves is a factor which may limit a nation's growth.
   l) Most people are employed in agriculture.
   m) The climate of most traditional nations is either too dry or too wet.

2. Place a check beside the statements from the following list that correctly describe the trade relationship between traditional and modern nations and among traditional nations.

   a) Modern and traditional nations have mutual trade interests.
   b) Traditional nations do not trade extensively among themselves.
   c) Traditional nations follow neocolonial trade patterns that supply raw materials to the modern nations.
   d) Peripheries of traditional countries maintain a two-way trade relationship with the centers.
   e) Peripheries mainly supply raw materials to urban centers that act as consumer or that act as a conduit for export to the modern nations.

3. Select the statements that correctly explain the relationship between low accessibility and traditionalism.

   a) Low accessibility implies poor transportation facilities which in turn helps to maintain the existence of a locally based economy.
   b) Low accessibility restricts the flow of information concerning innovations.
   c) Low accessibility is one factor that is directly related to poor health care.
   d) Low accessibility restricts the volume and direction of trade.

4. Select the statement that correctly describes the role of a locally-based economy in maintaining a state of traditionalism.

   a) In a locally-based economy everything that is produced is consumed locally having little left for trade.
   b) A locally-based economy is primarily agricultural whose products when used for trade do not generate enough cash to purchase modern technological procedures.
   c) Locally-based economies generally employ animate energy sources that restrict the potential for the growth of agricultural production per farm worker.
   d) A locally-based economy is largely inefficient in that the greatest potential is not derived from the land.

5. USE THE APPROPRIATE MAPS IN GOODE'S WORLD ATLAS AND THE DATA IN THE CHART ON THE FOLLOWING PAGE TO ANSWER PARTS a AND b OF QUESTION FIVE.

   a) List the improvements that must be made if Bolivia is to begin a trend toward modernization.

BOLIVIA

Land Use: (percentage of total, 1950)	
Arable and orchard	2.8
Permanent meadow and pasture	10.3
Forest and woodland	42.8
City and waste	44.1
Population (1967)	3,801,000
Employment pattern (percentage of work force)	
Argriculture, forestry, fishing and hunting	63.4
Mining and quarrying	4.1
Manufacturing	10.3
Construction	2.4
Public utilities	3.9
Commerce	5.4
Transportation and communications	2.0
Services	6.6
Population per physician (1966)	3160
Population per hospital bed (1966)	400
Motor vehicles in use (1963-5 av.)	
Private ('000s)	13.5
Commercial ('000s)	5.1
Railway track (mi/sq. mi; 1964)	0.008
Telephones (per '000 urban population, 1967)	0.7
Radio receivers (per '000 population, 1963-5 av.)	127.0
Daily newspapers (per '000 population, 1961)	26
Main trading partners:	
U.K.; U.S.A.; Germany; Japan; Netherlands; Belgium; Luxemburg; Argentina	
Distribution of trade (percentage of total value, 1962)	
Exports	
Nonferrous ores	98
Imports	
Food	20
Machinery	16
Fuel	2
Total trade (in million $ U.S., 1965)	
Exports	129
Imports	126

5. b) List the factors that would act to limit Bolivia's ability to modernize.

SELF-DIAGNOSTIC TEST KEY

1. a, e, f, g, h, i, k, l, m

2. a, b, c, and e

3. a, b, c, d

4. a, b, c, d

5. a) Improvements

   (1) Education
   (2) Accessibility
   (3) Agricultural innovation (mechanization, clearing additional land for planting)
   (4) Improved health care
   (5) Improved nutrition
   (6) Increase in food production
   (7) Lower birth growth
   (8) Enlarged industrial base
   (9) Expanded use of water power to replace used oil

   b) Limitations

   (1) Climate
   (2) Topography
   (3) Lack of natural resources