Study Guide & Additional Resources for Cultural Anthropology & Linguistics

ANT 2410
Indian River State College

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On the cover: Saturday morning butcher shop on Virgin Gorda in the British Virgin Islands, where the author conducted ethnographic research. Photo by the author.
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Introduction

Cultural Anthropology & Linguistics

at

Indian River State College

Welcome to ANT 2410 at Indian River State College. This course will introduce you to the fascinating fields of Cultural Anthropology and Linguistics, which study the entire range of all the world’s contemporary cultures and languages (to include the history of those cultures and languages). In this course, you will discover the reasons for the similarities and differences among the various cultures in the world; you will learn why some cultures believe that a woman should have more than one husband, while others believe that a man should worship more than one god. Anthropology also studies the familiar in addition to the exotic, however. In this course, you will be introduced to a unique perspective among the social sciences that will help you understand more about your own life and your own society.

ANT 2410 fulfills General Education requirements in the Social Sciences for both the Associate of Arts and the Associate of Science degrees at Indian River State College. This course is directly comparable to other introductory courses in cultural anthropology and linguistics taught at hundreds of colleges and universities around the country, so you can be confident that the credits you earn in this course will automatically transfer to any institution.

This Study Guide has been designed to accompany both the classroom and internet sections of ANT 2410, Introduction to Cultural Anthropology & Linguistics. The eight chapters in this Study Guide correspond to the eight units in the course; in each case, the chapters provide detailed guidance about what you’re required to know from each unit. If you follow the suggestions contained in this Study Guide, and if you are conscientious in your approach to your studies, you are sure to do well in this course. You are not on your own, however. As your instructor, I am willing and eager to help you with whatever difficulties you might experience. If you encounter any problems that might prevent you from succeeding in the course, please contact me immediately. You are invited to stop by at any time during my office hours, or you can give me a call to make an appointment at a time that is convenient for you. You also have the option of leaving a telephone message on my voice mail or communicating with me via e-mail (see your syllabus for details).

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Chapter 1

Anthropology and Science

LEARNING OBJECTIVES

At the completion of this unit, you will be able to define *anthropology* and to describe the *four main sub-fields* of the discipline. You will be able to describe *ethnography* and *ethnology* as the principal components of cultural anthropology, and you will be able to describe *participant observation* as the fundamental field technique of ethnographic research. You will also be able to describe the differences between the *emic and etic perspectives* that cultural anthropologists employ in the description and analysis of cultures. In addition, you will be able to define *science*, and you will be able to describe the *objective* and *systematic* nature of science; you will also be able to define such associated terms as *fact*, *hypothesis*, and *theory*. Finally, you will be able to list the principal differences between *science* and *pseudoscience*. 
LECTURE OUTLINES

I. Anthropology

the scientific study of human beings, including human culture and evolutionary aspects of human biology

A. Biological Anthropology

the scientific study of human evolution and human variation (also called Physical Anthropology)

1. Genetics

the study of the biological inheritance of traits from parents to offspring

2. Primatology

the study of the biology and behavior of nonhuman primates (the order of mammals that includes humans, apes, monkeys, and prosimians)

3. Forensic Anthropology

the application of anthropological techniques to legal issues (e.g., identifying personal characteristics from human remains)

4. Paleoanthropology

the study of human evolution, focusing on the fossil record of human ancestry
B. Archaeology

the study of non-living cultures through the excavation of their material remains

1. Historic Archaeology

the study of extinct literate cultures through the excavation of their material remains combined with the analysis of their written records

2. Prehistoric Archaeology

the study of extinct non-literate cultures through the excavation of their material remains alone (historic archaeology is applicable only to some societies less than 5,000 years old; prehistoric archaeology is the only archaeological approach applicable to the study of 99% of human societies that have ever existed)

C. Linguistics

the scientific study of language, including the nature of language, the history of language change over time, and the relationship between language and culture

1. Descriptive Linguistics

the description and analysis of the structure of language, including the study of the sounds used in speech (phonology), the way those sounds are used to make meaningful forms (morphology), and the grammatical rules governing the way those forms are arranged in sentences (syntax)
2. **Historical Linguistics**

the study of language change over time, including the study of the evolution of language families (i.e., groups of languages that share a common ancestral origin)

3. **Sociolinguistics**

the study of the relationships between social and linguistic variation—in other words, the study of language in its social context

D. **Cultural Anthropology**

the subfield of anthropology that describes and explains the similarities & differences among human cultures, focusing on field research in contemporary cultures and the generalizations that can be drawn from that research

1. **Ethnography**

the in-depth description of a particular contemporary culture based on intensive field research involving the technique of participant observation

   *participant observation:* an intensive field research technique in which ethnographers immerse themselves in the daily life of the people they are studying for an extended period of time

2. **Ethnology**

the comparative analysis of human cultures, based on ethnographic data, which seeks generalizations that will explain the reasons for the similarities and differences among human cultures

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3. Perspectives in Cultural Anthropological Research

a. Emic

emic accounts are descriptions and analyses expressed in terms of the conceptual schemes and categories that are regarded as meaningful and appropriate by the members of the culture under study (i.e., the subjective insider’s view)

b. Etic

etic accounts are descriptions and analyses expressed in terms of the conceptual schemes and categories that are regarded as meaningful and appropriate by the community of scientific observers (i.e., the objective outsider’s view)

II. Science

A. Definition

an objective and systematic method for acquiring factual knowledge, with the single restriction that whatever is claimed as scientific knowledge must be testable against publicly ascertainable evidence

B. Science is Objective

a claim to scientific knowledge is said to be objective when it is both publicly verifiable and testable

to say that science is objective is not to say that individual scientists are infallible or unbiased; instead, because they can be fallible and biased, science needs a way to correct errors and detect bias; objectivity provides the way

1. Objectivity Means Public Verifiability

to ensure that claims to knowledge are publicly verifiable, science insists that those claims be replicable (i.e., independent observers following the same procedures under the same conditions will get the same results)
2. **Objectivity Means Testability**

to ensure that claims to knowledge are testable, science insists that they be falsifiable; a statement is **falsifiable** if it is possible to **conceive** of evidence that would **prove** the statement **false** (if such evidence existed)

the rule of falsifiability is a **logically necessary** rule, because a factual claim is by definition a claim that is either true or false based on the evidence (i.e., all of the potentially relevant evidence, available now or in the future, that can be objectively validated)

if the statement is **falsifiable**, then it is **either** true **or** false, and the evidence will determine which (which means the statement can be tested against the evidence)

if the statement is **nonfalsifiable**, then it is **neither** true **nor** false—instead, the statement is meaningless babble, with no factual content whatsoever

C. **Science is Systematic**

the scientific method consists of five orderly steps intended to make scientific knowledge self-correcting and cumulative

1. **Define the Problem**

   specify as precisely as possible the research question that you are seeking to answer

2. **Review the Literature**

   seek insight from the work of other scientists on related problems (aids in avoiding errors and building cumulative knowledge)

3. **Formulate the Hypothesis**

   state a prediction that can be either confirmed or disconfirmed by the evidence

4. **Collect the Data**

   test the hypothesis against the evidence in a way that will be replicable by other scientists

5. **Draw the Conclusion**

   confirm or disconfirm the hypothesis, modify the hypothesis if appropriate, formulate new hypotheses, define new problems, contribute toward theory building

D. **Key Terms in Science**
1. **Fact**

An observation that has been repeatedly confirmed and for all practical purposes is accepted as “true” (although in science there is no final “truth”—every claim is subject to the logical possibility of revision)

2. **Hypothesis**

A tentative explanation of phenomena that can be tested against empirical evidence (i.e., a prediction that will either be confirmed or disconfirmed when tested)

3. **Theory**

A well-established explanation that identifies the underlying principles accounting for phenomena; theories have a firm basis as a result of having survived extensive testing, accumulated substantial evidence, and given rise to reliable predictions.

In science, theories do not turn into facts through the accumulation of evidence; instead, theories are the end point of science—they are understandings that result from extensive observation, experimentation, and creative reflection.

III. **Science vs. Pseudoscience**

A. **Pseudoscience Defined**

An approach that mimics the superficial trappings of science while violating one or more of the basic principles of science in an attempt to win support for a position that is scientifically unsupportable.

B. **Differences Between Science and Pseudoscience**

<table>
<thead>
<tr>
<th><strong>Science</strong></th>
<th><strong>Pseudoscience</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Based on reason, observation, and experimentation</td>
<td>Based on faith, revelation, and authority</td>
</tr>
<tr>
<td>Seeks expansion of knowledge</td>
<td>Seeks validation of belief</td>
</tr>
<tr>
<td>Falsifiable</td>
<td>Nonfalsifiable</td>
</tr>
<tr>
<td>Seeks disconfirming evidence</td>
<td>Does not seek disconfirming evidence</td>
</tr>
<tr>
<td>Subject to revision based on evidence</td>
<td>Not subject to revision based on evidence</td>
</tr>
<tr>
<td>Burden of proof on proponents</td>
<td>Burden of <em>disproof</em> on critics</td>
</tr>
<tr>
<td>Demands conceptual integration and evidential consistency</td>
<td>Ignores conceptual integration and factual consistency</td>
</tr>
<tr>
<td>Corrects errors</td>
<td>Promulgates errors</td>
</tr>
</tbody>
</table>
C. Pseudoscience Illustrated: “Scientific” Creationism

Science and Creationism: A View from the National Academy of Sciences

available at

http://www.nap.edu/openbook.php?record_id=6024

The following additional lecture notes are intended especially for internet students (although they may also be helpful to classroom students who were absent from the lecture presentation).

Most of the material that I present in classroom lectures for this unit is fairly simple and straightforward, and can be easily understood by comparing the Lecture Outlines in the preceding pages with the assigned chapters from Conrad Kottak’s Cultural Anthropology. While this course will focus on only two of the four main subfields of anthropology (namely cultural anthropology and linguistics), in my lectures I emphasize the fact that anthropology is an integrated, four-field discipline, and that any anthropological investigation of any topic is likely to incorporate insights and/or methods from all four divisions of the field. (Indeed, while most anthropologists tend to specialize in only one subfield, such as archaeology or linguistics, virtually all anthropologists receive graduate training in all four subfields, and some anthropologists, such as myself, consider themselves to be general anthropologists without a single subfield specialty.)

I do spend considerable time in class discussing the differences between science and pseudoscience; for an excellent summary and explanation of that discussion, you should refer closely to the National Academy of Sciences booklet listed above.
FILM SYNOPSIS

The Shock of the Other

The first of the two films that accompany this unit is an episode from the *Millennium* series hosted by David Maybury-Lewis entitled *The Shock of the Other*.

*The Shock of the Other* portrays the anthropological quest to understand people from different cultures. The anthropologist David Maybury-Lewis takes us to Europe and South America as he muses on his career and lifelong efforts to unravel the mysteries of culture and human nature. The film describes Maybury-Lewis’ relationship with the Xavante of western Brazil, a people who have been both his friends and the subjects of his ethnographic research for thirty years. As President of Cultural Survival, an organization dedicated to preserving indigenous cultures, Maybury-Lewis ventures into the remotest parts of Peru in an attempt to contact the Mascho-Piro. The style of the film is lyrical and poetic, and it creates an indelible impression of the impassioned nature of anthropological research.

This film is the first episode of David Maybury-Lewis’ ten-part series, *Millennium: Tribal Wisdom and the Modern World*. Maybury-Lewis begins the series with a visit to his Xavante brother in central Brazil where he explains the need to find a balance between cultural diversity and our desire to be like one another. Through scenes of the decimation of the tropical rain forests, interviews with threatened indigenous peoples, and the narrator’s reflections on the discovery of the Americas and other historical events, the film explains why so much is at stake when modern industrialism meets the tribal world.
The Shock of the Other portrays the anthropological quest to understand people from different cultures. Harvard University anthropologist David Maybury-Lewis takes us to Europe and South America as he muses on his career and lifelong efforts to unravel the mysteries of culture and human nature. The film describes Maybury-Lewis’ intensely personal relationship with the Xavante of western Brazil, a people who have been both his friends and the subjects of his ethnographic research for thirty years. As President of Cultural Survival, an organization dedicated to preserving indigenous cultures, Maybury-Lewis ventures into the remotest parts of Peru in an attempt to contact the Macho-Piro, a society that until that point had had only very minimal contact with the outside world. The style of the film is lyrical and poetic, and it creates an indelible impression of the impassioned nature of anthropological research.

The film opens at a monastery in Spain that had supported Christopher Columbus’s voyage to the New World at the end of the 15th century. Maybury-Lewis had studied languages at that same monastery several decades earlier, when he was a young man preparing to undertake his first fieldwork in the New World, and he reflects on the consequences of all that cross-cultural contact—both the historical contact between European and American Indian societies, and his own personal encounters with South American Indians.

From Spain, Maybury-Lewis returns to Brazil to visit his friends among the Xavante, the Amazonian Indians whom he’d originally studied many years earlier during his first ethnographic fieldwork. The Xavante encourage him in the idea that people of different cultures can establish mutually beneficial relations, even if they don’t fully understand one another—even if, as Maybury-Lewis suggests, the mystery of “The Other” remains.

The film then focuses on the expedition that Maybury-Lewis leads into Peru in an attempt to contact a little-known Indian culture called the Macho-Piro. Along the way, the expedition stops briefly at a mestizo village on the edge of the rainforest, where poor farmers are scraping out an impoverished existence even as the natural environment around them is being destroyed (the film includes dramatic images of ancient trees being devastated by bulldozers and chainsaws). The village strikes Maybury-Lewis as ghostly, unreal, and depressing, but despite the strangeness he notices indications of the spread of a world-wide culture. He sees a group of young boys playing soccer, and he makes the ironic comment that they are engaged in the most universal of all religions (after all, the game is enormously popular in virtually every country in the world, including the remotest parts of Brazil and Peru).

In the end, Maybury-Lewis and his colleagues do manage to film a few members of the Macho-Piro from a distance, and they do leave a few gifts (metal pots and pans, machetes) that the Macho-Piro presumably pick up after the filmmakers have gone. However, Maybury-Lewis never succeeds in establishing personal contact with any of the Macho-Piro or talking to any of them, which leaves him partially disappointed (after all, that’s what cultural anthropologists do), but at the same time partially relieved, because he knows that any contact with the outside world could prove disastrous to the Macho-Piro way of life (and disastrous to the Macho-Piro themselves in many ways, including the introduction of infectious diseases).
FILM SYNOPSIS

The Way of Science

The second of the two films that accompany this unit is an episode from The Human Quest series hosted by Roger Bingham entitled The Way of Science.

The Way of Science describes the scientific approach to knowledge, and contrasts it with the much older approach of myth. Host Roger Bingham explains that humans are storytellers, with brains that have evolved to see patterns, construct explanations, and make predictions. Both science and myth tell stories, but the stories they tell are fundamentally different in kind. Unlike the stories of myth, the stories of science must be tested against the world, and they must change when the evidence demands it. The film does an excellent job of portraying the wonder, excitement, and emotional satisfaction of the scientific approach; it conveys clearly the ways in which science adds to our appreciation of the magnificence of nature. As Bingham concludes, science is not an assault on the human spirit, as many of those who embrace myth would have it—instead, science is an expression of the human spirit.

Roger Bingham
This film is one of four episodes from *The Human Quest* series. “Humans are storytellers,” says host Roger Bingham at the beginning of the film. “Show us the sun, moon and stars and we’ll spin any number of tales about life and death, good and evil. We tell stories to feel at home in the Universe.” Humans are both mythmakers and scientists. Often, myth and science produce very different stories, and yet they are both products of our brains, trying to make sense of our experience.

The stories of myth and science, Bingham explains, are very different from each other, even though both sets of stories are produced by the same storyteller—namely, human beings. The stories of science are not etched in stone; the way of science is the way of doubt, not certainty or dogma. The stories of science are provisional, and must change if evidence demands. In contrast, the way of myth is filled with the same cravings for explanations in a bewildering world, but it seeks very different kinds of explanations (namely, timeless, unchanging explanations based on dogma that are not meant to be doubted, challenged, questioned, or even examined closely). Nevertheless, the brain that produces science and myth is the same one—a brain that is designed to see patterns and to make predictions. Thus science is part of our human birthright.

The film shows psychological experiments that demonstrate that infants have a scientific approach to life; they possess an intuitive physics that constrains their interpretations of physical events, and they possess brain mechanisms that guide their reasoning about the world. In essence, infants have “knowledge acquisition devices” that lead them to look for confirmation of certain intuitive expectations (such as the intuitive expectation that something cannot be in two different places at once). When toddlers play the “drop the spoon game” to see if their parents will continue to replace the spoon on their tray, they are engaged in a theory-building-and-testing activity that is essentially identical to the scientific method (i.e., infants are testing theories about gravitational effects and the predictability of human behavior).

The film turns to some vivid illustrations of the evocative power of myth, including the Indonesian shadow puppet theatre and scenes from a great Hindu epic, explaining that these morality plays are intended to convey wisdom to be taken to heart, not challenged.

Focusing on contemporary research in the cognitive sciences, the film explains that our perception of depth is hard wired in our brains (illustrated by a shifting illusion of domes and depressions, when the appearance of light and shadows alters our perception of the same image). The design of the human brain is passed on via genes. The brain is a bag of ancient tricks, and the result is that our perspective on any topic is an inescapable consequence of our biology. Both myth and science make attempts to model reality, and those models are the product of the same brain.

Roger Bingham explains that Isaac Newton employed the essence of scientific thinking by making connections: Newton’s theory of gravity explained, unified, and predicted a wide range of phenomena. Yet the notion of action at a distance (gravity) seemed occult; nevertheless it worked, and that’s all that matters in science (the stories of science must be bench-tested against the real world). Is the entire foundation of science threatened if one theory is challenged? The answer is no. Newton’s physics don’t apply to the inner space of the atom, or to phenomena moving near the speed of light—Newton’s mechanics need to be embedded within Einstein’s theory of relativity for that.
Chaos theory is a new idea in physics that requires adding to previous understandings, and that’s the way science works.

The film then discusses the concept of “complex adaptive systems” which emerge whenever simple rules generate complexity, and offers several illustrations: a computer simulation of the evolutionary process, in which self-replicating digital “organisms” invent many of the features of evolution, and various complex systems that have emergent properties, including the Balinese water temple system, the Pacific Northwest salmon fisheries that are managed by indigenous people based on mythical understandings, and the Chaco Canyon culture as a complex adaptive system that was forced to change its survival strategy. One of the points of complex adaptive systems is that evolution is an ongoing process: the race is never won, and we’re always being judged by the forces of natural selection.

Humans tell different kinds of stories to meet different needs, resulting in conflict all too often. For many people, there is little comfort in many of the stories of science; some people feel that science steals life’s mystery and meaning. The universe revealed by science is not intuitively attractive for most people; that’s why the way of myth (i.e., religion) has given meaning for most people throughout human history.

Science is in the business of shining light into the unknown, Bingham explains, and it has been amazingly successful—our understanding of the world has been immeasurably enlarged by science. Science is not an assault on the human spirit, Bingham insists—instead, science is an expression of the human spirit. We have better stories now, thanks to science, but that doesn’t take away our awe at nature’s power and magnificence. The moon still enchants lovers, the rainbow is still a delight; to explain is not to explain away. Some scientists speak of the transcendent pleasure of discovery that’s comparable to the transcendent delight many people find in myth. The way of science, Bingham says, is a search for order and harmony, which is perhaps the ultimate human quest.
SELECTED READING

Scientific Anthropology

James Lett

Excerpted from


Note: This article discusses the nature of science in the context of an on-going debate within anthropology between scientific and non-scientific approaches to the study of contemporary cultures. The four-volume Encyclopedia of Cultural Anthropology, where the article originally appeared, contains additional information on virtually all of the topics covered in this course. The Encyclopedia of Cultural Anthropology can be found in the Learning Resources Center at Indian River State College, where it is shelved in the Reference section. Students interested in the issues raised in this selection should consult the full text of the article in the Encyclopedia of Cultural Anthropology; a much more detailed exploration of the topic can be found in my book Science, Reason, and Anthropology (1997, Rowman & Littlefield).

Since its inception the discipline of cultural anthropology has had a dual identity, embracing simultaneously both the humanistic and scientific perspectives. While there have always been strong partisans for one side or the other...most anthropologists have taken a more eclectic approach and combined the two, leading to Eric Wolf’s oft-quoted observation that “anthropology is both the most scientific of the humanities and the most humanistic of the sciences.”

The humanistic and scientific perspectives, however, are fundamentally different, and it is not surprising that cultural anthropology has had difficulty integrating the two. Whereas humanistic anthropologists employ intuitive insight and empathic imagination in the attempt to evoke and interpret cultural variability, scientific anthropologists utilize logical analysis and empirical investigation in the effort to describe and explain cultural phenomena. The goal of humanistic inquiry is to produce contextual interpretations that are illuminating, while the goal of scientific inquiry is to produce causal explanations that are predictive. …

Nevertheless, humanistic anthropology and scientific anthropology can be regarded as complementary rather than contradictory, at least as far as scientific anthropology is concerned. Scientific anthropology does not deny the legitimacy of the humanistic
approach or the ability of humanistic anthropologists to produce moving evocations and meaningful interpretations of human affairs. It simply affirms that objective descriptions and testable explanations of cultural phenomena are both entirely achievable and eminently valuable. …

SCIENCE DEFINED

Science may be defined in a general sense as an objective and systematic method for acquiring factual knowledge. Science combines both deduction (reason) and induction (observation) in the pursuit of knowledge, alternating continually between the formation and the testing of hypotheses. Scientific ideas can come from any source, and any factual claim can be investigated using the scientific perspective. The scientific method is limited by a single restriction: whatever is claimed as scientific knowledge must be testable against publicly ascertainable evidence. …

As a technique for acquiring factual knowledge, science incorporates a number of guidelines designed to distinguish true synthetic propositions from false ones. Salient among those guidelines is the requirement for objectivity. Scientific objectivity implies two things: first, that the truth or falsity of a given factual claim is independent of the claimant’s hopes, fears, desires, or goals; and second, that no two conflicting accounts of a given phenomenon can both be correct. …

…A synthetic proposition...is a statement that is either true or false based on the evidence of experience (e.g., the first hominids appeared in Africa). Synthetic propositions convey information about the world by telling us what evidence we will encounter if the statement is true and how that evidence will differ if the statement is false. (True synthetic propositions are called “facts”; false synthetic propositions might be called “errors.”)…

Thus, when scientists speak of “objective knowledge,” they are referring to synthetic propositional knowledge that is both publicly verifiable and testable. To ensure that the claim to knowledge is publicly verifiable, scientists demand that the procedures employed in the collection of the evidence be replicable by independent observers. To ensure that the claim to knowledge is testable, scientists demand that the claim be falsifiable.

The test of falsifiability, which is most closely associated with the philosopher of science Karl Popper, is the single most important rule of science. It is the one standard that guarantees that all scientific statements are testable, and it is the outstanding feature that distinguishes science from other ways of knowing. In addition, it is the one standard by which are scientific explanations are judged. A statement is said to be falsifiable if it is possible to conceive of evidence that would prove the statement false. If the statement were not falsifiable—if no conceivable evidence could possibly prove it false—then all possible evidence would be irrelevant, and the statement could not be tested against the evidence. If the statement were not testable, then it would not be a synthetic proposition,
because the truth or falsity of a synthetic proposition can always be tested against the evidence. Hence, nonfalsifiable statements are propositionally meaningless. …

Thus, scientific knowledge is both tentative and self-correcting.

SCIENCE DEFENDED

…at the same time that science recognizes the tentative nature of objective knowledge, science also denies that all approaches to knowledge are equally valid. When it comes to factual knowledge, science has a record of success that far outshines any of the accomplishments of theology or mysticism or any other epistemological system; sound logical reasoning and publicly verifiable observation are demonstrably and abundantly superior to faith, revelation, intuition, consensus gentium, and all other approaches to propositional knowledge.

Science does not claim to be a perfect approach to factual knowledge or to be free of subjective bias, error, untruth, or fraud. Instead, science claims to be a superior approach to factual knowledge that is better able to detect and correct subjective bias, error, untruth, and fraud than any other approach ever developed. …

SCIENCE AND HUMANISM

Scientific anthropology is often perceived as being irrelevant or even antithetical to the values and concerns of humanism. Nothing could be further from the truth. In the first place, science does not in any way object to the aesthetic values of humanism. There is nothing whatsoever inconsistent about declaring an unwavering commitment to the pursuit of objective knowledge while
at the same time affirming an appreciation for literature, music, painting, sculpture, and drama. The oppositional dichotomy between science and humanism is a false one. ... The instrumental and the affective are not mutually exclusive categories. Scientific anthropology can and should be emotionally satisfying and thoroughly ethical, just as humanistic anthropology can and should be explicitly rational and logically consistent.

In the second place, science is anything but opposed to the moral values of humanism. The humanistic values for individual liberty, including freedom of thought and expression, are hardly inconsistent with the epistemological principles of science. The humanistic values for basic human rights, including the rights to life, liberty, and the pursuit of happiness, are in no way threatened by the standards of evidential reasoning embodied in science. The humanistic value for developing a set of ethical principles derived from critical intelligence is entirely compatible with the pursuit of scientific knowledge.

Those who envision a conflict between science and humanism fail to understand the true nature of either. Central to the philosophy of humanism is the conviction that human beings are solely responsible for discerning and defining the meaning of human life and that they should do so through the exercise of skeptical reason while respecting the freedom and moral equality of all individuals. As such, science is absolutely indispensable to humanism, for the inescapable reason that normative conclusions are always founded upon existential premises. We cannot decide what ought to be the case until we know what is the case. Science is simply the best technique human beings have yet devised for discovering (or, at least, approximating as closely as possible) what truly is the case.
SELECTED READING

Emic/Etic Distinctions

James Lett

Reprinted from


Note: This article discusses the development of the emic and etic concepts in anthropology. You might want to refer to this selection again once you have mastered the distinction between phonemes and phones (which will be presented in Unit 3 of our course); understanding the distinction between phonemics and phonetics will help you appreciate the analogy between emics and etics.

The neologisms “emic” and “etic,” which were derived from an analogy with the terms “phonemic” and “phonetic,” were coined by the linguistic anthropologist Kenneth Pike (1954). He suggests that there are two perspectives that can be employed in the study of a society’s cultural system, just as there are two perspectives that can be used in the study of a language’s sound system. In both cases, it is possible to take the point of view of either the insider or the outsider.

As Pike defines it, the emic perspective focuses on the intrinsic cultural distinctions that are meaningful to the members of a given society (e.g., whether the natural world is distinguished from the supernatural realm in the worldview of the culture) in the same way that phonemic analysis focuses on the intrinsic phonological distinctions that are meaningful to speakers of a given language (e.g., whether the phones /b/ and /v/ make a contrast in meaning in a minimal pair in the language). The native members of a culture are the sole judges of the validity of an emic description, just as the native speakers of a language are the sole judges of the accuracy of a phonemic identification.

The etic perspective, again according to Pike, relies upon the extrinsic concepts and categories that have meaning for scientific observers (e.g., per capita energy consumption) in the same way that phonetic analysis relies upon the extrinsic concepts and categories that are meaningful to linguistic analysts (e.g., dental fricatives). Scientists are the sole judges
of the validity of an etic account, just as linguists are the sole judges of the accuracy of a phonetic transcription.

Besides Pike, the scholar most closely associated with the concepts of “emics” and “etics” is the cultural anthropologist Marvin Harris, who has made the distinction between the emic and etic perspectives an integral part of his paradigm of cultural materialism. Pike and Harris continue to disagree about the precise definition and application of emics and etics (Headland et al. 1990). The most significant area of their disagreement concerns the goal of the etic approach. For Pike, etics are a way of getting at emics; for Harris, etics are an end in themselves. From Pike’s point of view, the etic approach is useful for penetrating, discovering, and elucidating emic systems, but etic claims to knowledge have no necessary priority over competing emic claims. From Harris’s perspective, the etic approach is useful in making objective determinations of fact, and etic claims to knowledge are necessarily superior to competing emic claims. Pike believes that objective knowledge is an illusion, and that all claims to knowledge are ultimately subjective; Harris believes that objective knowledge is at least potentially obtainable, and that the pursuit of such knowledge is essential for a discipline that aspires to be a science.

As is apparent, the debate over emics and etics raises a number of fundamental ontological and epistemological issues. It is not surprising, therefore, that controversy continues to surround even the definitions of emics and etics. Although the terms are part of the working vocabulary of most cultural anthropologists, there are no standard definitions that have won universal acceptance. A survey of introductory textbooks in anthropology reveals that the terms “emic” and “etic” are glossed in highly disparate fashion. The situation is even more obscure outside anthropology, where the concepts have been widely diffused and widely reinterpreted. The terms “emic” and “etic” are current in a growing number of fields--including education, folklore, management, medicine, philology, psychiatry, psychology, public health, semiotics, and urban studies--but they are generally used in ways that have little or nothing to do with their original anthropological context.

Despite that diversity and disagreement, it is possible to suggest a precise and practical set of definitions by focusing on emics and etics as epistemological concepts. From that perspective, the terms “emic” and “etic” should be seen as adjectives modifying the implicit noun “knowledge.” Accordingly, the distinction between emics and etics has everything to do with the nature of the knowledge that is claimed and nothing to do with the source of that knowledge (i.e., the manner by which it was obtained).

Emic constructs are accounts, descriptions, and analyses expressed in terms of the conceptual schemes and categories that are regarded as meaningful and appropriate by the members of the culture under study. An emic construct is correctly termed “emic” if and only if it is in accord with the perceptions and understandings deemed appropriate by the insider’s
culture. The validation of emic knowledge thus becomes a matter of consensus—namely, the consensus of native informants, who must agree that the construct matches the shared perceptions that are characteristic of their culture. Note that the particular research technique used in acquiring anthropological knowledge has nothing to do with the nature of that knowledge. Emic knowledge can be obtained either through elicitation or through observation, because it is sometimes possible that objective observers can infer native perceptions.

Etic constructs are accounts, descriptions, and analyses expressed in terms of the conceptual schemes and categories that are regarded as meaningful and appropriate by the community of scientific observers. An etic construct is correctly termed “etic” if and only if it is in accord with the epistemological principles deemed appropriate by science (i.e., etic constructs must be precise, logical, comprehensive, replicable, falsifiable, and observer independent). The validation of etic knowledge thus becomes a matter of logical and empirical analysis—in particular, the logical analysis of whether the construct meets the standards of falsifiability, comprehensiveness, and logical consistency, and then the empirical analysis of whether or not the concept has been falsified and/or replicated. Again, the particular research technique that is used in the acquisition of anthropological knowledge has no bearing on the nature of that knowledge. Etic knowledge may be obtained at times through elicitation as well as observation, because it is entirely possible that native informants could possess scientifically valid knowledge.

Defined in that manner, the usefulness of the emic/etic distinction is evident. Answers to the most fundamental anthropological questions—including the origins of humanity, the characteristics of human nature, and the form and function of human social systems—are part of the worldview of every culture on the planet. Like all human beings, individual anthropologists have been enculturated to some particular cultural worldview, and they therefore need a means of distinguishing between the answers they derive as enculturated individuals and the answers they derive as anthropological observers. Defining “emics” and “etics” in epistemological terms provides a reliable means of making that distinction.

Finally, most cultural anthropologists agree that the goal of anthropological research must be the acquisition of both emic and etic knowledge. Emic knowledge is essential for an intuitive and empathic understanding of a culture, and it is essential for conducting effective ethnographic fieldwork. Furthermore, emic knowledge is often a valuable source of inspiration for etic hypotheses. Etic knowledge, on the other hand, is essential for cross-cultural comparison, the sine qua non of ethnology, because such comparison necessarily demands standard units and categories.
Irreconcilable Differences: The Fundamental Incompatibility of Science and Religion

James Lett

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This article originally appeared in a popular journal in the United Kingdom that aims at communicating philosophical ideas to a general audience. It was deliberately intended to be provocative, but it is supposed to be intellectually provocative rather than emotionally provocative (i.e., it is intended to provoke thoughtful discussion and constructive debate). Your reaction to the conclusions presented in the article should not be based on whether you like or dislike science or religion, but instead on a rational consideration of the merits of the article’s arguments.

Among many recent arguments for a reconciliation between science and religion, one of the most eloquent is the late Stephen Jay Gould’s appeal for scientists and theologians to embrace what he calls the principle of NOMA, or ‘nonoverlapping magisteria’ (‘magisteria’ is an archaic word he resurrected meaning ‘teaching authority’). According to Gould, the ‘lack of conflict’ between science and religion arises from a lack of overlap between their respective domains of professional expertise.’ As Gould envisions it, science and religion are potentially complementary: ‘The net of science covers the empirical realm: what is the universe made of (fact) and why does it work this way (theory). The net of religion extends over questions of moral meaning and value. These two magisteria do not overlap.’

Besides being an eminent scientist, Gould was a remarkably graceful and intelligent writer, which only strengthens the appeal his argument has for many people. Unfortunately, his argument is founded upon a false premise. In point of fact, the scientific and religious domains do overlap to a considerable extent, as Richard Dawkins made clear in his rebuttal to Gould. A universe that did have a supernatural component would be fundamentally different from one that did not, and whether it did or did not would clearly be a question of great scientific import. Furthermore, as Dawkins points out, religions do make factual claims that are amenable to scientific investigation. For example, Christian claims about the Virgin Birth, the bodily Assumption of the Blessed Virgin Mary, the Resurrection of Jesus, and
the survival of human souls after death are all claims of a scientific nature. ‘Either Jesus had a corporeal father or he didn’t,’ Dawkins writes. ‘This is not a question of ‘values’ or ‘morals,’ it is a question of sober fact.’

The Scientific Approach to Knowledge

The best system that human beings have ever devised for addressing questions of sober fact is a system of collective rationality called science. Science can be succinctly defined as an objective, logical, and systematic technique for acquiring propositional knowledge, but the key to understanding the essential nature of the scientific method is to recognize that science has a built-in mechanism for correcting its own errors. Science is an open-ended enterprise, erected on the cornerstone of a perpetual search for falsifying evidence; in science, every claim is subject to relentless scrutiny. Nothing—no fact, no idea—is sacrosanct. In contrast to religion, which claims to be in possession of absolute truth, science claims only to possess provisional truth.

Therein lies the virtue of science, however, because the knowledge it produces is continuously being refined and expanded. Science may not be a perfect approach to propositional knowledge, but it is vastly superior—and immeasurably more successful—than any alternative that has ever been proposed or adopted by any group of people anywhere in the world at any time in human history. The biologist E. O. Wilson calls scientific knowledge the ‘signature achievement of humanity;’ that observation is not, as he says, a ‘paean to the god of science’ but rather a salute to ‘human ingenuity.’

The Religious Appeal to Faith

Religious believers know that their beliefs can’t be supported by scientific reason, and that’s why most of them don’t even try. Indeed, most of them rarely reflect upon their beliefs at all. As Steven Pinker notes, religious believers ‘don’t pause to wonder why a God who knows our intentions has to listen to our prayers, or how a God can both see into the future and care about how we choose to act.’ The striking thing about religious beliefs, in fact (striking, that is, to nonbelievers), is just how preposterous those beliefs are. ‘Such shocking nonsense,’ is how H. L. Mencken characterized religious belief; for him (and for many other perceptive thinkers), religious belief ‘is so absurd it comes close to imbecility.’ In Letters from the Earth, Mark Twain applied his inimitable wit to the ludicrous nature of Christian belief, with uproarious results; it is highly recommended reading.

Religious believers generally retreat behind the mask of faith when challenged to defend their beliefs, because they have no real option (if they could successfully defend their beliefs on the basis of reason, they’d do so in an instant). The problem, however, is that the appeal to faith is insupportable on any grounds. The appeal to faith can’t possibly be justified by reason (after all, faith simply means belief without any supporting evidence whatsoever or belief despite abundant contradictory evidence, and neither alternative is remotely reasonable). At the same time, the appeal to faith can’t possibly be justified by faith itself (after all, faith in Christianity tells you that faith in Islam is misplaced, and vice versa, so clearly faith is fallible—at least some of the faithful have to be wrong).
Remarkably, religious believers have persuaded themselves not only of the absurd notion that faith can somehow be used to lend intellectual respectability to their irrational beliefs, but also of the execrable notion that faith is somehow admirable. Religious believers are deluded on both counts. Faith is nothing more than blind, irrational, unreflective prejudice; it is a vice rather than a virtue. The huge irony, of course, is that faith happens to be socially and politically respectable at the moment; nevertheless, faith is both intellectually indefensible and morally reprehensible.

Faith is morally reprehensible for the simple reason that it can be used to justify absolutely any kind of horrific evil humans can imagine or invent. In the history of the world, faith-based religion has inspired countless acts of censorship, imprisonment, torture, mutilation, and murder, all directed against individuals who refused to embrace the particular supernatural beliefs of the faithful. That’s what leads Steven Weinberg to conclude that ‘on balance the moral influence of religion has been awful,’ and that’s what leads Daniel Dennet to argue that ‘there are no forces on this planet more dangerous to all of us than the fanatics of fundamentalism.’ Richard Dawkins aptly describes the pitfalls of faith in his characteristically trenchant style: ‘[It] is capable of driving people to such dangerous folly that faith seems to me to qualify as a kind of mental illness.’

Conclusion

There can be no reconciliation between science and religion because the two approaches are antithetical to one another. It is impossible to conduct a rational dialogue with people who insist upon basing their position upon irrational arguments. Consider the question of moral principles, for example. Those who are religiously inclined believe (incorrectly) that principles of morality derive from divine law and divine revelation; those who are scientifically informed believe (correctly) that principles of morality derive from human nature and human reasoning. It is logically impossible to reconcile these beliefs, and that means there’s no possibility of any genuine progress in a dialogue between science and religion. Steven Weinberg makes this point eloquently: ‘I am all in favor of a dialogue between science and religion, but not a constructive dialogue. One of the great achievements of science has been, if not to make it impossible for intelligent people to be religious, then at least to make it possible for them not to be religious. We should not retreat from this accomplishment.’

Religious belief is always intellectually indefensible, because it is inherently irrational. Religious behavior is often morally reprehensible, as the history of the world has repeatedly shown. There is yet another damning indictment that can be directed against religion, however: it is deeply demeaning to human beings. Religion insults human intelligence, denigrates human courage, and undermines human nobility. The deity envisioned by the world’s major monotheistic religions, for example, is either powerless to stop the abundant evil that occurs in the world, or he is able to stop it but chooses not to. If it’s the former, he’s impotent and worthless; if it’s the latter, he’s monstrous and tyrannical. In either case, the notion that humans should prostrate themselves before such a being, and shower him with
worshipful praise, is enormously offensive to anyone with a shred of self-respect. The only appropriate response to such a being, if he indeed existed, would be to oppose him with every last resource of human ingenuity, courage, and resolve.

Those who would like to see a peaceful coexistence between science and religion should remember that, while science has always recognized the right of religion to exist, religion has not always granted science the same right. Instead, religion has often sought to imprison scientists, to squelch scientific discourse, and to outlaw the teaching of scientific truth. Despite that ugly history, few if any scientists or other reasonable people would wish to respond with comparable crimes against religious believers. However, while we should respect people’s right to believe whatever they want to be, that doesn’t mean we have to respect people’s beliefs. Religious belief is intellectually indefensible and morally reprehensible, and religious believers don’t deserve to be sheltered from the announcement of that fact.

Science is a relatively new adversary to religion in the battle for the hearts and minds of humans, but if the past four centuries are any indication, there’s reason to be optimistic about the long-term prospects for science. Religion once enjoyed exclusive dominion over a very wide range of human interests, with no opposing force to challenge its superstitious accounts. Science has steadily and dramatically encroached on that domain, however, offering accounts of vastly greater explanatory power (as well as vastly greater imagination and beauty). Meanwhile science continues to expand the realm of human knowledge with dazzling speed, and religion remains mired in the same old tired irrational silliness. Daniel Dennet believes there’s no future in religion, and his belief is rooted in a conviction about human nature. ‘Whatever we hold precious,’ he writes, including our religious belief, ‘we cannot protect it from our curiosity, because being who we are, one of the things we deem precious is the truth. Our love of truth is surely a central element in the meaning we find in our lives.’ If he’s right, and religious belief eventually succumbs to the human yearning for truth, it will represent the triumph of the best that is in us over the worst that is in us.

Notes


5Steven Weinberg, ‘A Designer Universe?’, 
The New York Review of Books vol. XLVI, no. 16 (October 21, 1999), pp. 46-68.


8Steven Weinberg, ‘A Designer Universe?’, 
The New York Review of Books vol. XLVI, no. 16 (October 21, 1999), pp. 46-68.

TEST QUESTIONS

1. The study of language change over time, including the study of the evolution of language families, is called ____________________________.

2. As explained in the article *Scientific Anthropology*, a(n) ____________________________ is a statement that is either true or false based on the evidence of experience.

3. ____________________________ [Prehistoric archaeology or historic archaeology?] is applicable to the study of 99% of human societies that have ever existed, while ____________________________ [prehistoric archaeology or historic archaeology?] is applicable only to some societies within the past 5,000 years.

4. The major sub-field of anthropology that studies human evolution and human variation within an evolutionary framework is called ____________________________.

5. ____________________________ is defined as an approach that mimics the superficial trappings of science while violating one or more of the basic principles of genuine science in an attempt to win support for a position that is scientifically insupportable.

6. To ensure that claims to scientific knowledge are publicly verifiable, science insists that those claims must be ____________________________.

7. The application of anthropological techniques to legal issues, such as identifying personal characteristics from human remains, is called ____________________________.

8. Step Five in the scientific method is to ____________________________.

9. As explained in the article *Emic/Etic Distinctions*, ____________________________ knowledge is essential for cross-cultural comparisons, and ____________________________ knowledge is essential for an intuitive and empathic understanding of a culture.

10. A(n) ____________________________ is an observation that had been repeatedly confirmed and for all practical purposes is accepted as “true.”

11. ____________________________ accounts are descriptions and analyses expressed in terms of the conceptual schemes and categories that are regarded as meaningful and appropriate by the community of scientific observers.

12. When presented with claims to knowledge, science places the burden of ____________________________ on the ____________________________ of the claims, and pseudoscience places the burden of ____________________________ on the ____________________________ of the claims.
13. The study of extinct non-literate cultures through the excavation of their material remains alone is called ____________________________.

14. The comparative analysis of human cultures which seeks generalizations that will explain the reasons for the similarities and differences among human cultures is called ____________________________.

15. The major sub-field of anthropology that studies language from a scientific perspective is called ____________________________.

16. As Roger Bingham explains in the film The Way of Science, scientific stories, which try to make sense of experience, __________ [are or are not?] etched in stone, and they __________ [are or are not?] provisional.

17. Step Three in the scientific method is to ____________________________.

18. A(n) ____________________________ is a well-established explanation that identifies the underlying principles accounting for phenomena; it has a firm basis as a result of having survived extensive testing, accumulated substantial evidence, and given rise to reliable predictions.

19. As described in the film The Shock of the Other, the goal of the organization Cultural Survival is to ____________________________.

20. The study of the biology and behavior of non-human primates is called ____________________________, which falls within the major anthropological sub-field of ____________________________.

21. As suggested in the film The Way of Science, series host Roger Bingham __________ [does or does not?] agree that science robs life of its mystery and meaning, and he __________ [does or does not?] believe that science represents the ultimate human quest.

22. If it is possible to conceive of evidence that would prove a statement false, then the statement is said to be ____________________________.

23. As explained in the article Emic/Etic Distinctions, the validation of emic knowledge is a matter of ____________________________.

24. “Scientific Creationism” is an example of __________ [genuine science or pseudoscience?], while the fundamental premise of “scientific creationism” (i.e., the existence of a supernatural creator), is __________ [falsifiable or nonfalsifiable?].

25. As explained in the film The Way of Science, the stories provided by ____________________________
are timeless explanations that are not supposed to be challenged, while the stories provided by ____________ are subject to revision and must be bench-tested against the world.

26. The major sub-field of anthropology that studies non-living cultures through the excavation of their material remains is called _____________________________.

27. ___________________________ is defined as an objective and systematic method for acquiring factual knowledge, with the sole restriction that whatever is claimed as knowledge must be testable against publicly ascertainable evidence.

28. As explained in the article *Emic/Etic Distinctions*, besides Kenneth Pike, the scholar who has been most closely associated with the concepts of emics and etics has been the anthropologist _____________________________.

29. The study of language in its social context is called _____________________________.

30. Step Four in the scientific method is to _____________________________.

31. As explained in the article *Scientific Anthropology*, science is ___________________________ [incompatible or compatible?] with the aesthetic values of humanism, and science is ___________________________ [incompatible or compatible?] with the moral values of humanism.

32. A scientific claim to knowledge is said to be *objective* if it is *both* ___________________________ and _____________________________.

33. The study of extinct literate cultures through the excavation of their material remains combined with the analysis of their written records is called _____________________________.

34. The in-depth description of a particular contemporary culture based on intensive field research is called _____________________________.

35. The study of the biological inheritance of traits from parents to offspring is called _____________________________.

36. In a wry comment on the disappearance of indigenous cultures around the world, the anthropologist David Maybury-Lewis remarks (in the film *The Shock of the Other*) that ___________________________ has become the most universal of all religions.

37. To ensure that claims to scientific knowledge are testable, science insists that those claims must be _____________________________.

38. If independent observers following the same procedures under the same conditions get the same results, then those results are said to be _____________________________.
39. ________________ accounts are descriptions and analyses expressed in terms of the conceptual schemes and categories that are regarded as meaningful and appropriate by the members of the culture under study.

40. As portrayed in the film *The Shock of the Other*, the Mascho-Piro ____________ [do or do not?] take some of the gifts that David-Maybury Lewis and his companions leave for them, and Maybury-Lewis ____________ [does or does not?] succeed in establishing personal contact with the Mascho-Piro on his trip upriver in Peru.

41. Step One in the scientific method is to _____________________________.

42. The description and analysis of the structure of language, including phonology, morphology, and syntax, is called _____________________________.

43. The major sub-field of anthropology that studies the similarities and differences among human cultures, focusing on field research in contemporary cultures and the generalizations that can be drawn from that research, is called _____________________________.

44. As explained in the article *Emic/Etic Distinctions*, the validation of etic knowledge is a matter of _____________________________.

45. A(n) _____________________________ is a tentative explanation of phenomena that can be tested against empirical evidence to be either confirmed or disconfirmed.

46. The study of human evolution, focusing on the fossil record of human ancestry, is called _____________________________, which falls under the major anthropological sub-field of _____________________________.

47. _____________________________ is an intensive filed research technique in which ethnographers immerse themselves in the daily life of the people they are studying for an extended period of time.

48. Step Two in the scientific method is to _____________________________.

49. The _____________________________ [emic or etic?] perspective could be characterized as the objective outsider’s view, while the _____________________________ [emic or etic?] perspective could be characterized as the subjective insider’s view.

50. As discussed in the article *Irreconcilable Differences: The Fundamental Incompatibility of Science and Religion*, James Lett argues (along with many prominent scholars) that the claims of science and religion ____________________________ [do or do not?] frequently overlap, and furthermore that science is intellectually and morally ____________________________ [inferior or superior?] to religion.
Chapter 2

Culture and Human Nature

LEARNING OBJECTIVES

At the completion of this unit, you will be able to define *culture* as the term is used by anthropologists, and you will be able to distinguish between *culture* and *society*. In addition, you will be able to define a number of key concepts used in cultural anthropology, including *sociocultural system, enculturation, culture shock, ethnocentrism, cultural relativism, world view*, and *ethos*. Finally, you will be able to define the term *human universal* and list several examples; you will also be able to describe the implications that human universals have for *human nature*. 
LECTURE OUTLINES

I. The Concept of Culture
   A. Culture
      the learned and shared beliefs and behaviors characteristic of human societies
   B. Society
      a group of individuals that (1) has both sexes, (2) has all ages, (3) occupies a common territory, and (4) reproduces itself over time
   C. Sociocultural System
      a human society and its culture
   D. Enculturation
      the process by which individuals learn the beliefs and behaviors characteristic of their society
   E. Culture Shock
      the feeling of discomfort or disorientation individuals often experience when immersed for the first time in an alien culture
   F. Ethnocentrism
      the tendency to view one’s own culture as superior to all others (e.g., more natural, more satisfying, more appealing)—a form of bias that judges other cultures by the standards of one’s own culture
   G. Cultural Relativism
      the position that the varying standards and values of different cultures need to be understood in their cultural context—an attempt to avoid the bias of ethnocentrism and to use objective criteria to judge other cultures; cultural relativism does not imply that any and all cultural beliefs or practices necessarily deserve tolerance and/or respect from members of other cultures
   H. World View
      the learned and shared definition of reality characteristic of a particular culture (all cultures have a world view)
   I. Ethos
      the learned and shared definition of morality characteristic of a particular culture (all cultures have an ethos)
II. Human Universals

A. Definition

traits found in all normal humans and/or all human societies other than anatomical and physiological characteristics (i.e., psychological and cultural traits)

B. Examples

1. Facial Expressions

(1) all humans use the same facial expressions to express the same emotions; (2) all humans have difficulty simulating authentic facial expressions without the stimulus of emotion; (3) all humans are fairly adept at recognizing inauthentic expressions

2. Language

all human cultures have language; all languages are composed of contrasting units of sound (phonemes) that form basic units of meaning (morphemes) that are employed in accordance with rules of grammar (syntax); all humans have minds adapted to acquire language easily (only) in childhood

3. Sexual Attraction & Jealousy

in every culture, nubility is seen by men as a central attribute of female attractiveness; high status is seen by women as a central attribute of male attractiveness; husbands are, on average, older than their wives; men are sexually aroused more quickly than women; men are aroused by visual stimuli more readily; men are more violently jealous than women (although women are sexually jealous in all cultures)

C. Universal Pattern of Sociocultural Systems

1. Adaptive Strategies

all human cultures rely on learned and shared behaviors and technologies to ensure their biological survival

2. Kinship

all human cultures distinguish between relatives and non-relatives on the basis of consanguineal and affinal criteria (i.e., descent and marriage)
3. **Political Organization**

all human societies rely on culturally-transmitted social mechanisms for maintaining internal and external order

4. **Religion & Art**

all humans make ethical and aesthetic judgments, and all human societies include religion and art as social expressions of these universal habits of mind

III. **The Nature of Human Nature**

it has recently been demonstrated that the human mind is not a blank slate, but instead a collection of “mental organs” that have evolved to solve particular problems…so it follows that human universals provide vital clues to the human mind, and cross-cultural comparisons are crucial to identifying universals

The following additional lecture notes are intended especially for internet students (although they may also be helpful to classroom students who were absent from the lecture presentation).

Part I of the Lecture Outlines for this Unit (“The Concept of Culture”) consists of a simple vocabulary lesson, focusing on several of the basic terms that are used in cultural anthropology. Conrad Kottak provides full contextualization of these terms in the assigned chapter in *Cultural Anthropology*.

Part II of the Lecture Outlines for this Unit (“Human Universals”) is a fairly straightforward summary of the issues presented in greater depth in the Selected Reading in this chapter (“Human Universals”) and the film *The Nature of Human Nature*. 
FILM SYNOPSIS

The Nature of Human Nature

The first of the two films that accompany this unit is an episode from The Human Quest series entitled The Nature of Human Nature.

The Nature of Human Nature examines the biologically-based characteristics that all human beings in all cultures share. The film presents insights from the emerging scientific paradigm of evolutionary psychology to argue that the human mind evolved by the same mechanisms as the human body. After watching the film, you should be able to answer the following questions: What are the specific elements of human nature? What are the implications of the Williams Syndrome for the structure of the human mind? What is motherese? How does natural selection work? What role did natural selection play in shaping human nature? Who were Alfred Russell Wallace and Charles Darwin? What are the First and Second Darwinian Revolutions? In what way is the human mind like a Swiss army knife? If there is a universal human nature, what accounts for cultural differences? Which taste preferences are human universals? Is sexual jealousy universal? Is it the same for males and females? Are facial expressions universal?
This film is one of four episodes in *The Human Quest* series, and it introduces what series host Roger Bingham calls “the second Darwinian Revolution”—our new understanding of the evolutionary history of the human brain which is, like the body, a product of natural selection. Our minds can be thought of as a kind of patchwork quilt of successful solutions to the challenges faced by our ancestors over millions of years. Because of this shared evolutionary history, we are all inheritors of the same legacy: a universal human nature, which explains why people from different cultures have so much in common.

Roger Bingham begins this episode by explaining that we all have our local cultures that do set us apart, but at the same time we’re all members of the same species. There is a universal human nature, and it has several identifiable elements.

The cognitive scientist Steven Pinker cites one example of our shared human nature, namely language, which occurs in all cultures. Languages in every culture are always complex (there’s no such thing as a “primitive” language), and all languages share the same basic design.

The evidence from contemporary research in the cognitive sciences has revealed that the human mind is not a blank slate, but instead consists of many specialized brain circuits or adaptations; these adaptations are the foundations of many of our skills.

The film offers a vivid portrayal of children with Williams syndrome, a disorder characterized by below-average IQ but average or even above-average language skills. It’s clear from this evidence that the brain is not a general-purpose computer with a single learning mechanism; instead, there are obviously different parts of the brain that are responsible for different cognitive functions (and clearly the language function is distinct from the general-intelligence function).

The existence of “motherese” is a clear indication of a universal adaptation. In all cultures of the world, regardless of the language spoken, adults (especially mothers) use a sing-song, musical tone of voice when speaking to infants that’s very different from the tone of voice they use when speaking to other adults. Linguists use the term “motherese” to refer to the tone of voice used around the world when speaking to infants.

Natural selection is the force that shaped the human mind, just as it is the force that shaped the human body. Alfred Russell Wallace and Charles Darwin, two 19th century British scientists, were responsible for solving the “mystery of mysteries”—namely, how and why life takes the various forms it does (Wallace was a Welshman who spent years conducting research in Indonesia; Darwin was an Englishman who lived most of his life in a small village outside London). At the end of his book *On the Origin of Species*, Darwin made a prophetic statement: in the distant future, he wrote, psychology will be based on a new foundation. Darwin knew that our mind is the product of our brain, and that our brains are the product of evolution by natural selection. We’re in the midst of a Second Darwinian Revolution (if the First Darwinian Revolution offered a completely new account of the human body, or physical evolution, the Second Darwinian Revolution is offering an entirely new account of the human mind, or mental evolution).
Anthropologist John Tooby and psychologist Leda Cosmides (a husband & wife team who are leaders in the emerging field of evolutionary psychology) explain that the human mind is like a Swiss army knife, with many different tools for many different specialized functions. Just as a Swiss army knife has a screwdriver, a pair of tweezers, a pair of scissors, a corkscrew, etc., the human mind has specialized mechanisms for language, facial recognition, cheater detection, spatial mapping, etc.

If there are human universals, the film asks, why don’t all people in all cultures act the same? The answer is that different cultures are found in different environments with different resources, different opportunities, and different constraints; if humans with the same nature are placed in different environmental contexts, their responses will naturally be different (by contrast, if they’re placed in similar environmental contexts, their responses will be similar). Human flexibility results in variation on a theme—as a result, cultural differences pale in comparison to cultural similarities, which result from a universally shared human nature.

The film discusses several particular human universals which are also summarized in the article “Human Universals” as well as the “Lecture Outlines” in this Study Guide: the tendency for humans to pit in-groups against out-groups (“us versus them”), the human dietary fondness for fats, sweets, and salts, the human propensity for sexual jealousy, and the universality of facial expressions.

The film concludes by observing that people shouldn’t be worried about the fact that we all share a common human nature. It doesn’t mean that there aren’t at the same time individual differences between us, or that we’re not responsible for our actions. In fact, the film explains, our universal human nature is an important underpinning of human freedom: if there were not such a thing as human nature, then totalitarians would be free to create any kind of humans they wanted, just by indoctrinating them from birth. Totalitarians can’t be successful in doing that, because human beings always insist on expressing their human nature, and will resist any attempt to get them to act against their nature.
FILM SYNOPSIS

Deepest Desires

The second of the two films that accompany this unit is an episode from the Human Instinct series entitled Deepest Desires.

Deepest Desires addresses a number of questions surrounding the instinctive sexuality of the human species. Why is there typically a fundamental difference in attitudes between men and women toward sexual relations? What physiological factors can influence men and women to stray from their partners? This exceptionally witty and entertaining program also explores these and many other issues, including the relationships between pheromones and an attractive immune system, status symbols and marital appeal, and ovulation and facial feature preference.

Deepest Desires is Part 2 of a four-part series on Human Instinct hosted by the renowned British researcher Lord Robert Winston. The series takes a close-up look at the rudimentary responses and primal urges that shape the human experience. Both fascinating and fun, each program uses engrossing experiments, captivating interviews, high-tech graphics, and dramatic reenactments to illustrate the instincts that underpin our actions.

The instinct to have sex is one of the most potent we possess. It’s vital if we are to produce the next generation. In this program we find out what it is about the way we look, the way we smell, and what we possess, that can attract the ideal mate.

Vive la Différence

In the time it takes a woman to produce a single child (in the 40 weeks of pregnancy from the moment of conception to the moment of childbirth), a man could easily produce hundreds or
even thousands of children. In fact, a woman releases only about 400 ova during her lifetime, whereas a man releases about 300 million sperm in a single ejaculation. (Women typically produce at most a handful of children during their lifetime; the record number of children for a man is 888 by a Moroccan emperor.) Given the fact that women make a much greater biological investment in producing a child than men do, it’s only natural that women have evolved to be more selective when it comes to having sex.

**The Perfect Date**

Our instincts drive all of us to have sex—and so potentially to have children. But the way men and women go about this is very different.

Two actors were sent on to a London University campus with hidden cameras to ask a simple question: “Will you sleep with me?” One is a woman asking men and the other a man asking women.

The results could not be more different. Just as in the original experiment, no women said yes but three-quarters of the men thought it sounded a good idea.

The difference in men and women’s approach to sex has an evolutionary basis. Each month a woman releases just one egg. Should this egg be fertilized she then has to carry the baby through nine months of pregnancy.

It’s a big investment. In contrast a man has virtually limitless sperm available and could father hundreds of children in the same nine months. So it’s not surprising that women tend to be more choosy when deciding just who to have sex with.

**A Match Made in Heaven**

When looking for a partner people instinctively respond to a whole range of signals. The simplest of these is body shape. For women, a narrow waist and wide hips are a sign of fertility and therefore prove highly attractive to men.

Women are instinctively drawn to body shapes that signal good genes. So she is more likely to go for a man with wide shoulders and a narrow waist—a sure signal of both physical strength and a good immune system.

But we also detect potential partners in more subtle ways. At Newcastle University Craig Roberts asks women to wear a T-shirt for several days. Men are then invited to choose the one they think smells best.

Almost invariably the men prefer the smell of women who have an immune system very different to their own. (Lord Robert Winston served as a test subject in just such an experiment, and he too preferred the smell of women whose immune systems were very different from his own.) This makes good evolutionary sense—children born to parents with different immune systems have the best chance of fighting off illness themselves.
Ian Penton-Voak of Stirling University and David Perrett of the University of St Andrews have been asking women to pick out attractive men, with fascinating results.

Whereas most men are fertile all day every day (and everyone knows it), women can only conceive when they are ovulating—and in humans, unlike most other mammalian species, external signs of ovulation are essentially absent (many other primates vividly advertise ovulation with bright red genital swellings). As an evolutionary consequence of the mystery surrounding a woman’s ovulation, men are likely to stick around their mate, because they don’t want to miss their chance of mating during a woman’s few fertile days.

At an instinctive level, women appear to know when they’re ready to conceive (i.e., they can sense, on some level, when they’re ovulating). Experiments reveal that women find different types of men attractive at different times during their menstrual cycles. When who were ovulating at the time of the experiments expressed a preference for more masculine faces, with thicker necks, broader chins and jaws, and more prominent brows. Women who were not ovulating preferred male faces that were more feminized, with slimmer features, less prominent brows, and larger eyes. It appears that women have evolved to be attracted to males with external features that are indicative of strength and health, especially on the days when they are most likely to conceive a child.

**Love Rats**

Because women give birth they can be sure any child they have carries their genes. Men cannot be 100% certain, so they have evolved a means of protecting against the possibility of cheating partners.

It’s all down to testicle size—a man’s are bigger than a gorilla’s, but smaller than a chimp’s. A gorilla has a harem of females dedicated to him and him only.

So he doesn’t need a whole lot of sperm at the ready. But female chimps aren’t faithful at all, so the males ejaculate as much as possible, in to as many females as possible, to give their sperm the best chance of creating a baby.

That’s why chimps’ testicles are huge relative to those of a gorilla. Human females aren’t very promiscuous, but neither are they entirely faithful. This explains why the size of a human male’s testicles are somewhere in between a gorilla’s and chimp’s.

But even though we’re getting closer to comprehending the relentless logic of sexual attraction, we’re still a long way from understanding the science of love.
Cultural anthropology is charged with documenting and explaining the similarities and differences among the peoples of the world, but cultural anthropologists have paid far more attention to the differences than they have to the similarities. As a result, as Brown (1996:609) observes, “the literature in anthropology that explicitly deals with universals is extremely slight,” even though “anthropologists may and must rely upon universals to do their work.” If there were no human universals, cultural anthropologists would not be able to understand or communicate with the people they study. In fact, however, there are hundreds of universals, and that is why ethnographers have little trouble understanding the people they study. Indeed, as Brown (1991:5) notes, “nowhere in the ethnographic literature is there any description of what real people really did that is not shot through with the signs of a universal human nature.”

Many of the elements of that universal human nature are familiar and obvious. The extensive list suggested by Brown (1991; 1996) includes the following: All humans use language as their principal medium of communication. Further, all languages have the same basic architecture. All languages are comprised of basic units of sound (phonemes) that are combined to form basic units of meaning (morphemes), and all languages arrange morphemes according to implicit rules of grammar (syntax) to produce understandable utterances. All people use paralinguistic tones and gestures to augment linguistic communication. All people classify each other in terms of status and role, and all
people classify each other in terms of kinship. People everywhere employ a division of labor by age and sex. All people display emotion via universal facial expressions which elicit universal emotional responses. All people have aesthetic standards, just as all people have ethical standards. All people reckon time, understand logic, and think causally. People everywhere recognize the possibility of lying and cheating, and all people attempt to protect themselves from liars and cheaters.

The existence of these human universals has fundamental implications for anthropology, because they point to a universal human nature. In emphasizing cultural differences rather than cultural similarities, anthropology has contributed to a misleading image of human nature. In exaggerating “the importance of social and cultural conditioning,” as Brown (1991:154) says, anthropologists “have, in effect, projected an image of humanity marked by little more than empty but programmable minds.” The evidence refutes the assumption that the mind is empty, however, and strongly supports the proposition that the human mind is a complex set of specific problem-solving mechanisms which evolved as adaptations to particular problems encountered during human evolution. If that proposition is true, the traditional anthropological approach to a number of fundamental questions needs to be reevaluated.

Consider the question of gender roles, for example. Anthropology has traditionally maintained that gender roles are highly malleable, but a close examination of human universals reveals that gender roles are much less variable than the discipline has suggested (Brown 1991:108-110). In every culture in the world, for instance, sex is seen as a service provided by females to males. In every culture, men are more violently jealous than women. All over the world, men are more quickly aroused than women, and men in every culture are more aroused by visual stimuli than women. The average husband is universally older than his wife, and the average man is universally more aggressive than the average woman. In every culture in the world, nubility is seen as a central attribute of female attractiveness for men, and high status is seen as a central attribute of male attractiveness for women.

Anthropology has traditionally deemphasized these facts along with the other universal features of human experience. As a result, anthropology has failed to produce a cogent account of human nature. In its zeal to avoid biological reductionism, anthropology has frequently ignored the influence of biology on human behavior. Numerous errors have resulted. For example, Symons (1992:145) argues that “whenever a social scientist attributes something like the human male’s sexual attraction to nubile females to cultural conditioning...he [or she] implicitly rejects a nativist conception of human nature and embraces an empiricist conception...[which has] essentially no chance of being correct.”

According to evolutionary psychology, the critical variable underlying the universal differences between the sexes is the different reproductive roles played by men and women (Brown
Men can accomplish their reproductive goals through the simple act of insemination, whereas women must make a far greater investment in gestation and lactation if they hope to successfully reproduce. Therefore a woman who wanted to maximize her reproduction would gain little by having more men inseminate her, but a man who wanted to maximize his reproduction would gain considerably by inseminating more women. Given these constraints, natural selection has acted to produce a number of “mental organs” adapted to maximizing reproductive success. Men who are violently jealous will compete with their fellows to limit access to female reproductive resources, thus increasing their chances of achieving paternity. Men who are attracted by nubility are more likely to inseminate healthy, fertile women. Women who are attracted by high status are more likely to choose men who can provide protection and resources for themselves and their offspring.

I am not suggesting that these hypotheses generated by the paradigm of evolutionary psychology are necessarily and absolutely correct in every detail. They are provocative, and they may well be correct, but their real value lies in the fact that they constitute a coherent attempt to address a neglected issue. Human universals raise important questions about human nature that demand an integrated anthropological approach. I agree with Brown (1991: 156) that it is “irresponsible to continue shunting these questions to the side, fraud to deny that they exist.” It is intellectually irresponsible to ignore the questions raised by human universals not only because those issues lie at the heart of the anthropological enterprise, but also because anthropology has been guilty of promulgating misinformation about those very questions. Brown (1991:154) suggests that anthropologists have long had a disreputable motive for exaggerating the differences among the world’s cultures: “The more those differences can be shown to exist, and the more they can be thought to reflect purely social and cultural dynamics, the more sociocultural anthropologists (or sociologists) can justify their role in the world of intellect and practical human affairs and thus get their salaries paid, their lectures attended, their research funded, and their essays read.”

The sociocultural anthropologists who have been most responsible for exaggerating the differences between cultures, of course, have been interpretive anthropologists. The central premise of interpretive anthropology, after all, is that cultures are incommensurable with one another. Scientific anthropologists have demonstrated that premise to be false by identifying extensive similarities among all human cultures. To properly address the questions posed by human universals, cultural anthropology must abandon the epistemological relativism of interpretive anthropology and embrace the essential principles of rational inquiry. It must further abandon the erroneous assumptions of the Standard Social Science Model and embrace the evolutionary perspective of biological anthropology and archeology. In a phrase, cultural anthropology must be conceptually integrated with the rest of the scientific community.
TEST QUESTIONS

1. A culture’s ______________________________ is its learned and shared definition of reality.

2. All languages are composed of contrasting units of sound called ________________________.

3. As explained in the article Human Universals, traditional anthropology has contributed to a misleading view of human nature by ______________________ [over-emphasizing or under-emphasizing?] cultural similarities and ______________________ [over-emphasizing or under-emphasizing?] the importance of cultural conditioning.

4. A(n) ______________________________ is a human society and its culture.

5. As explained in the film Deepest Desires, women ________________ [do or do not?] display readily discernible, external signs of ovulation, and when they are ovulating they tend to be attracted to men with ________________ [more or less?] masculine facial features.

6. As described in the film The Nature of Human Nature, the “Second Darwinian Revolution” refers to the ________________________________.

7. In the film The Nature of Human Nature, a Swiss army knife is described as analogous to ________________________________.

8. As explained in the film The Nature of Human Nature, the existence of cultural differences is explained by the presence of ________________________________ adaptations in ________________________________ environments.

9. As explained in the film Deepest Desires, the testicles of male humans are ______________________ [bigger or smaller?] than the testicles of male gorillas, because female humans are ______________________ [more or less?] promiscuous than female gorillas.

10. Psychological and cultural traits found in all humans and/or all human societies are called ________________________________.

11. As explained in the film The Nature of Human Nature, the Williams Syndrome provides evidence that the human brain is ________________________________.

12. When it comes to sexual response, women in general are ______________________ [less readily or just as readily?] aroused by visual stimuli compared to men in ________________________________ [absolutely all or only some?] human societies.

13. ______________________ is the tendency to view one’s own culture as superior to all others.

14. All languages use sounds to form basic units of meaning called ________________________.
15. The average husband is older than his wife in ________________ [all, most, some, few, or no?] human societies.

16. As explained in the film *The Nature of Human Nature*, the specific elements of the universal human nature ________________ [do or do not?] include an innate ability to acquire language, and they ________________ [do or do not?] include standard facial expressions for a wide range of emotions.

17. As described in the film *The Nature of Human Nature*, Alfred Russell Wallace, the co-founder of the theory of evolution, was a naturalist from ________________ who traveled to ________________ to do research in natural history.

18. As explained in the film *Deepest Desires*, there is a simple biological reason why men and women have evolved to have fundamentally different attitudes towards casual sex, namely that ____________________________________________________________.

19. ________________ is the process by which individuals learn the beliefs and behaviors characteristic of their society.

20. Aesthetic judgments ________________ [are or are not?] a human universal, and the belief in a single supreme god ________________ [is or is not?] a human universal.

21. All human cultures distinguish between relatives and non-relatives on the basis of both ________________ and ________________ criteria, which refer respectively to descent and marriage.

22. Reality is to morality as ________________ [ethos or world view?] is to ________________ [ethos or world view?].

23. All humans have ________________ [little or significant?] difficulty simulating authentic facial expressions without the stimulus of genuine emotion, and all humans generally ________________ [can or cannot?] recognize inauthentic facial expressions.

24. As described in the film *The Nature of Human Nature*, the pattern of sounds used cross-culturally to speak to infants is called ________________________________.

25. As explained in the article *Human Universals*, which of the following have anthropologists determined to be human universals: (a) the classification of individuals by occupation; (b) division of labor by height; (c) the use of mechanical clocks; (d) division of labor by weight? [the answer could be one, some, all, or none of these]

26. ________________ is defined as the learned and shared beliefs and behaviors characteristic of human societies.

27. All languages incorporate rules of grammar called ________________________________.
28. As explained in the film *The Nature of Human Nature*, the human mind evolved by the same mechanism as the human body, namely ________________.

29. Cultural relativism ___________ [does or does not] maintain that any value held by any culture necessarily deserves respect, tolerance, and forbearance from people in other cultures, and cultural relativism ___________ [does or does not] attempt to use objective criteria to judge the values held by other cultures.

30. In the experiments depicted in the film *Deepest Desires*, approximately ________ percent of college-age men agreed to have sex with an unknown, attractive young woman who asked them to sleep with her, and approximately ________ percent of college-age women agreed to have sex with an unknown, attractive young man who asked them to sleep with him.

31. As explained in the film *The Nature of Human Nature*, the Williams Syndrome is an inherited condition in which language ability is ___________ [normal or retarded?] and IQ is ___________ [above average or below average?].

32. Learned and shared behaviors and technologies that ensure biological survival are called ________________, and they are found in ___________ [all or most?] human societies.

33. The human mind ________________ [is or is not?] a blank slate, and human universals ________________ [do or do not?] provide important clues to the nature of the human mind.

34. In every culture in the world, ________________ is seen by men as a central attribute of female attractiveness, and ________________ is seen by women as a central attribute of male attractiveness.

35. Morality is to reality as ________________ [ethos or world view?] is to ________________ [ethos or world view?].

36. Some form of political organization ___________ [is or is not?] universal to all human societies, and some form of art ___________ [is or is not?] universal.

37. ________________ is the feeling of discomfort or disorientation individuals often experience when immersed for the first time in an alien culture.

38. As described in the film *The Nature of Human Nature*, the “First Darwinian Revolution” refers to the ________________.

39. As explained in the film *Deepest Desires*, women are attracted to men with broad shoulders and narrow waists because those features signal ________________, while men are attracted to women with narrow waists and wide hips because those features signal ________________.
40. __________ [All or Most?] normal humans can acquire one or more languages easily in early childhood, and ____________ [all or most?] normal humans find it difficult to acquire a second language after childhood.

41. As explained in the article *Human Universals*, anthropology has traditionally maintained that gender roles are highly ____________ [malleable or unmalleable?], but recent research in human universals has revealed that gender roles are much ____________ [more or less?] variable than was once thought.

42. ____________ is the position that the varying standards and values of different cultures need to be understood in their cultural context.

43. As explained in the film *The Nature of Human Nature*, the specific elements of the universal human nature ____________ [do or do not?] include a fondness for fats, sweets, and salts, and they ____________ [do or do not?] include a tendency for both sexes to experience sexual jealousy.

44. A culture’s ____________ is its learned and shared definition of morality.

45. When it comes to sexual response, women in general are ____________ [less quickly or just as quickly?] aroused compared to men in ____________ [absolutely all or only some?] human societies.

46. As explained in the film *Deepest Desires*, men generally prefer the smell of women who have an immune system that is very ____________ [different from or similar to?] their own, and when Lord Robert Winston presented himself as a subject in an experiment testing that generalization, his personal preferences ____________ [did or did not?] conform to the general pattern.

47. A(n) ____________ is a group of individuals of both sexes and all ages that occupies a common territory and reproduces itself over time.

48. ____________ [All, Most, Some, Few, or No?] human sociocultural systems have language.

49. As explained in the film *Deepest Desires*, the testicles of male humans are ____________ [bigger or smaller?] than the testicles of male chimpanzees, because female humans are ____________ [more or less?] promiscuous than female chimpanzees.

50. As explained in the article *Human Universals*, which of the following have anthropologists determined to be human universals: (a) division of labor by age; (b) the use of paralinguistic tones and gestures; (c) the classification of individuals in terms of status and role; (d) division of labor by sex? *the answer could be one, some, all, or none of these*
Chapter 3

Descriptive Linguistics

LEARNING OBJECTIVES

At the completion of this unit, you will be able to define the essential elements of human language, and to distinguish it from other animal communication systems such as primate call systems. In addition, you will be able to describe the essential elements of descriptive linguistics. You will be able to describe the fundamentals of phonology, morphology, and syntax, and you will be able to define such key terms as phone, phoneme, and morpheme. You will also be able to describe the significance of paralinguistics, and you will be able to identify the origins in linguistics of the ethnological terms emic and etic.
LECTURE OUTLINES

I. Oral Communication

A. Call System

a system of oral communication used by non-human primates that consists of a limited number of meaningful sounds (calls) that can only be produced when particular environmental stimuli are encountered—calls are automatic and cannot be combined

B. Language

a system of oral communication used exclusively by humans that has several distinctive features, including productivity and displacement; all normal humans possess language, and all languages are equally adept at communicating any message

productivity: the ability to generate an unlimited number of new combinations to communicate ideas that are comprehensible to other speakers of the language

displacement: the ability to talk about things other than present environmental stimuli, including the past, the future, the imaginary, and the hypothetical; displacement is the foundation of abstract thought

II. Descriptive Linguistics

the scientific study of a spoken language, encompassing phonological, morphological, and syntactical description and analysis

A. Phonology

the study of the sounds used in speech—i.e., which sounds are present and which are significant

1. Phone

a minimal unit of sound produced by the human articulatory mechanism; the total number of possible phones is approximately 80; English uses on average approximately 40 phones; phones are described in terms of their manner of articulation—e.g.: p = voiceless bilabial stop, b = voiced bilabial stop, &[“th”] = voiceless dental fricative, @[“th”] = voiced dental fricative
2. Phoneme

a sound contrast (i.e., a phonetic difference) that makes for a difference in meaning in a given language; phonemes can be readily identified in *minimal pairs*

*minimal pair:* a pair of words in a given language that have different meanings but that have only a single phonetic difference between them

English examples: bat/vat (b/v is not phonemic in Spanish), gnat/mat, tin/din, use/use, IMport/imPORT, pin/spin (p[h] is phonemic in Hindi)

B. Morphology

the study of the way sounds are combined to make meaningful forms—i.e., the description and analysis of morphemes

1. Morpheme

the smallest unit of sound that carries meaning in and of itself—i.e., words and their meaningful parts, but not all morphemes are words, and not all words consist of only one morpheme

   a. bound morpheme

   a morpheme that conveys meaning only when attached to another morpheme—e.g., in English, prefixes and suffixes such as re-, un-, -ed, -s

   b. free morpheme

   a morpheme that conveys meaning without being attached to anything else—i.e., simple words (compound words consist of more than one morpheme—e.g., cats, catlike)

2. Lexicon

a list of the entire set of all the morphemes in a language—i.e., a dictionary containing all the morphemes in a language and their meanings

C. Syntax

rules governing the order and arrangement of words in sentences (i.e., grammar)

(Compare *John hit the ball* with *The ball hit John*, or *Colorless green ideas sleep furiously* with *Furiously sleep ideas green colorless.*
D. **Paralinguistics**

the description and analysis of non-lexical sounds that nevertheless convey meaning in a cultural context, including tone, tempo, emphasis, inflection, and “morphoids” (morpheme-like utterances)

E. **Phonemics/Phonetics and the Emic/Etic Analogy**

both phonemic and emic analyses are concerned with the subjective distinctions made by insiders (i.e., native speakers/natives); both phonetic and etic analyses are concerned with the objective distinctions made by outsiders (i.e., linguists/ethnographers)

The following additional lecture notes are intended especially for internet students (although they may also be helpful to classroom students who were absent from the lecture presentation).

The Lecture Outlines for this unit are largely self-explanatory, especially when read in conjunction with the assigned chapter in Conrad Kottak’s *Cultural Anthropology*. One example that might not be clear from the outline is the distinction between the words “pin” and “spin”, which is *not* a minimal pair in English. The two words are not a minimal pair because a minimal pair, by definition, is a pair of words that has one and only one phonetic difference. There are two phonetic differences between “pin” and “spin,” as Conrad Kottak explains in *Cultural Anthropology*: the *p* in “pin” is *aspirated*, whereas the *p* in “spin” is *unaspirated*. Thus aspirated-<i>p</i> and unaspirated-<i>p</i> do not make a phonemic difference in English, although they do make a phonemic difference in Hindi.

Another example from the Lecture Outlines that might benefit from amplification concerns the discussion of “Paralinguistics.” When it mentions that “tone” can be used in a cultural context to convey meaning, it’s not referring to *tone* in the sense of *musical pitch*, but rather *tone* in the sense of cadence and emphasis—as when we express sarcasm in American English by using a particular “tone” of voice. Many languages also include what might be called “morphoids” as elements of paralinguistics. A morphoid is an utterance that is not, strictly speaking, an element of the language’s lexicon (i.e., it is not a morpheme), yet the utterance nevertheless conveys a clear meaning. Examples in American English would include the use of “uh-huh” and “unh-uh” to express affirmation and negation, or the use of “tsk-tsk” to express disapproval.

Finally, there are four questions in the Test Questions (#’s 24, 33, 41, and 44) that ask you to demonstrate your understanding of the analogy between emics and etics in cultural anthropology and phonemics and phonetics in linguistics. These questions build on material we’ve already covered in Unit 1 (especially the article in this *Study Guide* entitled “Emic/Etic Distinctions”—now that you understand the difference between phones and phonemes, the analogy between cultural anthropology and linguistics should be very clear. It’s true that all four questions presume that you know the difference between nouns and adjectives, but that should be a safe presumption for college students. For example, in the phrase “phonemic analysis,” is the term *phonemic* a noun or an adjective? In the phrase “an English phoneme,” is the term *phoneme* a noun or an adjective? Beyond that, who studies phonemes, linguists or cultural anthropologists? Who studies emic perspectives, linguists or cultural anthropologists?
FILM SYNOPSIS

The first of the two films that accompany this unit is Part One of The Human Language Series entitled Colorless Green Ideas.

Colorless Green Ideas explores the nature and significance of human language. It describes the revolution in linguistics that was begun by Noam Chomsky, and it demonstrates the ways in which the study of language reveals the nature of the human mind. After watching the film, you should be able to answer these questions: What is language? How is language related to human identity? How does human language differ from other animal communication systems? What is a word? What is the function of syntax? Is there a universal grammar to human languages? How much of language is instinctive, and how much is learned? What are the advantages of language? What are its limitations?

This film is Part 1 of The Human Language Series. It explores the nature and significance of human language. This episode describes the revolution in linguistics that was begun by Noam Chomsky, and it demonstrates the ways in which the study of language reveals the nature of the human mind.
Summary/Transcript of *Colorless Green Ideas*

SOME ISSUES THAT THE FIELD OF LINGUISTICS ADDRESSES

Questions from the beginning of the film:

(Miller): What is language?

(Gleitman): Is language simple or is language complex?

(Fodor): How can [a child acquiring a language] learn so much from so little?

(Byrd): How does a child know what a word is?

(Slobin): How is it that we can so alter our thought patterns so as to fit into the linear arrangement of any language?

(Fodor): What specific biological endowment could we have that allows us to do this?

(Gleitman): Is there some core of properties true of all human languages?

(Chomsky): How do people interact with language? How do people do what I am now doing?

(Aronoff): People don’t think when they speak, they just speak.

(Film Narrator): Why are languages filled with rules we all follow without knowing why?

[In the following examples from the film, the italicized phrases are ones that are not found in normal or grammatical speech.]

“The big red balloon” but not *The red big balloon* [people are asked why]

[Woman speaking French] “Un gros balon rouge” but not *Un gros rouge balon*

(Pinker): “Three big round red plastic balls” but not other orderings of the adjectives.

(Carlin): “Stop and go traffic” but not *Go and stop traffic.*

(Aronoff): You can “reclimb” and you can “reinstitutionalize” but you can’t *refall down.*

(Slobin): You can say “rouse up the natives” but you can’t say *Don’t rouse up them.*

Everyone knows you have to say “That John left surprised me,” but not *John left surprised me*

(Tannen): “It’s the same old story” but not *It’s the old same story*

Language is the most human thing about being human, yet most people don’t think much about it. Traditionally linguists have studied the history, vocabulary, and grammar of the world’s languages. Within our generation, new theories have revolutionized our thinking. Today linguists ask questions about how we use language and how language functions inside the human mind.
(Film Narrator): There have been 3 major revolutions in linguistics.

(Newmeyer): (1) [about 200 years ago] The realization that sound change is regular; you can work out changes languages have gone through over time, reconstruct ancient languages, and talk about language change in a precise way. (2) [about turn of the 20th century] Not just language change, but languages themselves are systematic and rule governed. (3) [1957] Chomsky published the book Syntactic Structures, which asks the question, “What is a possible human language?” There are abstract mental processes governing language. This moved linguistics away from studying sentences which were already produced to the question of what is the human potentiality for producing sentences.

(Lasnik): The language faculty is a subsystem of the human brain. That organ of the brain yields language under the right set of conditions. It is determined by our biological endowment and is invariant across the species.

(Chomsky): The capacity of language for infinite creativity from finite resources. The most elementary property of language is that we can produce new sentences never said before. The point of language is to produce and understand things you never heard said before.

(Gleitman): Each language has about 40 sounds and a limited number of words, but it can produce an unlimited number of sentences and sentences never heard before.

(Miller): with a small number of words, we can make an infinite number of sentences.

(Aronoff): Example: Senator Joseph McCarthy’s “the most unheard of thing ever heard of.”

WHAT IS A WORD, AND HOW DOES A CHILD KNOW WHAT A WORD IS?

Kiss is a word, but so is kissed. People can’t say what a word is. [Film shows a number of people who are unable to provide a definition.]

One possible definition: “The smallest separate piece of a language that all by itself will have a meaning.

(Elgin): But there are words which themselves are composed of smaller parts that have a meaning, e.g. kicked, where “-ed” certainly is not a word.

(Lasnik): And I didn’t do that. Is “n’t” a word?

(Klavans): “Antidisestablishmentarianism” is interesting because everyone thinks it is the longest word in the English language, but there are many longer words, mostly chemical terms.

(Aronoff): The longest word in Webster’s 7th is neumonoultramicrosopicovolcamonilkanosisosis, a disease that miners get from breathing microscopic rock particles.

(Carlin): “Pre” and “suf” are prefixes; suf is the prefix of suffix; is fix the suffix for prefix and suffix?
(Byrd): There are meanings for which there may not be words (what is the indentation below your nose called?) and things we recognize as words but which we have no meaning for. *Apodictic* is a word, but what does it mean?

Languages may have words with meanings not shared by other languages.

For example, the woman’s name *Mujinga*, which comes from a language of Zaire, means “a child born with umbilical cord all over her body.”

Words can have whole sentences wrapped up in one word. Slobin cites a single Turkish word which means “Are you one of those that we have not been able to Europeanize? Leer cites an Eskimo word meaning “Don’t you want to go window shopping with me?”

Another possible definition: “A word is the sequence of letters between two blanks.”

(Byrd): But what about speech? There are no blanks in spoken language.

(Carlin): “Ommona” means “I’m leaving” [sounds something like “I’m gonna go”].

Bob Hope & Bing Crosby singing what sounds like “Mairsy dotes and dotesy dotes and little lamsydivey,” and which actually means “Mares eat oats and does eat oats and little lambs eat ivery.”

(Aronoff): Maybe the hardest thing that the mind has to do is to break spoken language into words. Millions have been spent trying to get machines to do this, but a child by age one can do it without training.

**WORDS AS CONCEPTS, BUT WHAT IS A CONCEPT?**

(Aronoff): Concepts are slippery objects; words stand for things, but the word “tree” doesn’t stand for one particular tree but instead for the concept of tree.

Are there concepts that we need not invent because we are born already knowing them? Plato said so; so does Chomsky.

**THE MARBLE AND THE BOX**

(Chomsky): Given two marbles, one in box, one outside, which is *near* the box? How does a child know that a marble that is in a box cannot be near the box?

[Film shows small children and adults, all independently agreeing that the marble must be *outside* the box to be *near* it.]

(Chomsky): The concept of box that we develop is an obscure one. It includes the interior, but it does not matter what is in the interior. This is an abstract concept. There is no evidence that the child has available that the box is not just its surface (indeed, an invented concept, such as a *cube* in geometry, does refer only to the surface).

(Miller): In everyday conversation we are enormously created. It is virtually certain that any 20 word sentence has never been uttered or heard before.

66
(Little Boy): Boy, one more minute of those hot lights and I’d be fried shish kebab.

(Carlin): I’m going over the softball game and beat up Hitler’s widow.

(Baker): General Alexander Haig once said “There is a conscious castration of America’s eyes and ears around the world.” Nobody could have spoken that sentence before Haig.

(Miller): Calculating number of word combinations: if there were, say, 10 possibilities for each consecutive word of a sentence, after 10 words, there would be 10 to the 10th power word combinations.

(Little Boy): and in that cat he had a little little rat and in that little little rat there was a little little mouse...

(Lasnik): This is the office I work in. This is the desk that sits in the office I work in. This is the clutter that’s piled on the desk that sits in the office I work in. There is no limit on how long we could prolong this. One of the basic formal properties that allows for infinite creativity is the ability to put a sentence into yet a larger sentence.

(Miller): There is no longest sentence. Some short sentences can be used over and over.

[The film then gives examples from a carnival Barker and a Las Vegas wedding chapel:]

“Five for a dollar, it takes two seconds.”

“Do you John take Mary in holy matrimony so long as you both shall live?”

But short sentences can be improbable too, as, for example, the sentence “Short sentences can be improbable, too.”

SYNTAX: WORDS AND GRAMMAR

(Aronoff): We have a system that is very strict in many ways but allows a great deal of freedom as long as you stay within the bounds of the system. We have a very small number of rules and between them you can make up an infinite number of sentences.

(Chomsky): The beginnings of Science are the capacity to be amazed by simple things. By allowing oneself to be puzzled by a simple question, such as why things fall down rather than flying into space, science begins.

(Newmeyer): Such a simple question: How did sound and meaning ever get linked together? These are two unlike things. What biological event could link these? Answer: The creation of grammar. Grammar is the system which allows the mismatched elements, sound and meaning, to be linked to each other.

The independence of the grammatical structure of a sentence and the events that it: The first task of grammar is to organize words in a line one after another. An event is about to take place [The film shows a lady falling off a cable car]. Will we report in the order that it occurred? Is there a natural order to events? “A woman fell from the cable car.” But what came first, the woman or the cable car? [The film then shows a boy kicking a ball.] “The boy kicked the ball.” But the boy, the kicking,
and the ball form a unitary event. It seems that when speak that we report them in the order they occurred, but in reality events do not occur bit by bit. This is one of the puzzles of syntax, that the form of a sentence is often independent of its meaning. Boy, ball, and kick can occur in any order in language. In reality they occur simultaneously.

One of the major tasks of language is to take a meaning which is essentially atemporal and non-linear and arrange it in linear order to make different kinds of points.

The independence of form and meaning: a sentence can be grammatical but meaningless. Does the form of a sentence depend on its meaning? Consider the sentence “Colorless green ideas sleep furiously.”

(Chomsky): A small industry has been spawned around this sentence, so that poems, songs, etc. have been written about it.

If you try this sentence on a child, the child will giggle but accept it. If you try “Furiously sleep ideas green colorless,” the child would stare blankly instead. It doesn’t matter what the words are for a sentence to be a sentence of English.

UNIVERSAL GRAMMAR

(Gould): Syntax. No other animal seems to have it. We have to assume that something that is so much at the basis of human achievement is an evolved capacity.

(Lasnik): You inherit many of the principles and processes in your language. The 5000 or so languages are very similar.

(Chomsky): From the human point of view we are all very different, but from the point of view of some Martian, we would all look alike, just as from the human point of view, all frogs look alike. From the frog point of view, frogs look very different from each other.

(Gleitman): The differences between human languages are trivial compared to the differences between human languages and other animal communication systems.

(Slobin): (There are two major ground plans in building a language: 1) Relying on the order of words to convey the meaning of your overall thought, e.g. English. (2) Changing the ending of words one by one and then shuffling them around., e.g.Latin: “cattum columna sustinet” means “the column holds up the cat,” while “cattus columnam sustinet” means “the cat holds up the column.”

(Miller): You might ask how many languages use (1) vs. (2)? There’s not a simple answer, because most languages use a little of each; it may change over time back and forth. English is more like (1) but may be moving toward (2).

(Mary Laughren, who lived with the Warlpiri in Australia for over a decade): Warlpiri is interesting for testing what is universal in language because it has been spoken in isolation from non-Australian languages for possibly up to 60,000 years. Being nomads, Warlpiris value things they can carry in their heads rather than on their backs, like language. They value the subtle use of language.
Warlpiri is an inflected language, a language of type (2), in which word order doesn’t matter, for example “boy kicked ball” could be expressed by “kicked ball boy” or “ball boy kicked,” with the appropriate inflections on the end of each word.

However different languages may seem on the surface, underneath they seem to be cutout of the same pattern. An excellent analogy can be made with human faces: each has eyes, a nose, a mouth, yet every human face is uniquely identifiable. The same is true for languages: each is uniquely identifiable, but each has the same fundamental structure of phonology, morphology, and syntax, and each has the same capacities and limitations.

**SOME THINGS LANGUAGE IS NOT GOOD FOR: THE INDEPENDENCE OF LANGUAGE AND THOUGHT**

Just how good is language at doing the job it was designed to do? If it is just a biological adaptation, then you would expect as for other biological adaptations that there would be limits on fit between the job that it does and the job that it was designed to do.

How well can language describe a person, describe an individual face? [The film gives visual examples of how imprecise language is in describing faces.]

How can you describe a spiral; you must use a gesture; you could use language, but it would take a complex set of sentences (attempted in the film, without great success, by Lieberman).

(Miller): “That’s a very leafy tree.” How leafy is it?

(Carlin): Giving directions: a map is much better. Jonathan Winters was fond of saying “You go on down a good hundred miles and take a right. Or is it a left?”

(Chomsky): There are fine thoughts which are not expressible with language. Language has structure, and anything with structure and design has intrinsic limits. If it had no structure and design, it would be useless for anything. A hammer has structure which makes it good for some things but not others.

(Fodor): Though a map is good for giving directions and a picture is worth a thousand words, there are many subtle things that we can do with language that we cannot do any other way.

**ARBITRARINESS OF THE RELATIONSHIP BETWEEN FORM AND MEANING**

(Miller): Subtlety in language comes from the words themselves, which can be associated with anything.

(Aronoff): Language is abstract, you can talk about things that aren’t really there, e.g. form, truth, love, etc. [The film gives an illustration of Aronoff’s son’s personal word for breakfast cereal, “gump,” illustrating the arbitrariness of form and meaning.]

(Sid Cesar): That’s not a light, that’s a lulu. Turn the lulu on.
(Chomsky): If you speak English, you call a tree a tree, but it’s “baum” in German. [The film then gives illustrations of varied vocabularies, including the many words for “camel” in Arabic, and the detailed vocabulary sailors use to label the parts of a sailboat.]

THE ABILITY OF LANGUAGE TO EXPRESS ABSTRACT IDEAS

(Fodor): Language provides words to say anything we can think of.

(Sebeok): Language can express conditions as you wish them to be, as they might be, as they were at one time, as they will be in the future. Animals cannot do this.

(Fodor): Language can express negation and counter-to-fact thoughts. Try to draw a picture of “There’s not a giraffe standing beside me.”

(Newmeyer): Language has given us an ability to think abstractly, which no other animal can do. Because we can think abstractly, we don’t have to talk about what is in our immediate environment. We can plan for the future, we can create art, we can create complex social organizations. All these things are possible because we can think abstractly.

SOME CONCLUSIONS ABOUT LANGUAGE AND LINGUISTICS

(Newmeyer): Linguistics provides the most accessible window on the human brain given that we cannot cut open brains to investigate vision, perception, etc.

(Gleitman): Is language simple or is it complex? Answer: It is simple for those creatures who have evolved to use it.

(Chomsky): A child in a language environment will develop language in the same way as other aspects of human growth.

(Gleitman): I take it as the current task of linguistics to ask the question about language, How much of it is built in and in what way, and how much of it must be learned by exposure to the environment of speaking people? [These questions will be addressed in subsequent episodes of the series.]
FILM SYNOPSIS

Playing the Language Game

The second of the two films that accompany this unit is Part Two of The Human Language Series entitled Playing the Language Game.

Playing the Language Game examines the process of language acquisition, and features interviews with many prominent linguistic theorists, including Steven Pinker and Noam Chomsky. After watching the film, you should be able to answer these questions: Is language learned or innate (or some combination of the two)? How many languages are there in the world at the moment? To what degree are they the same or different? How do children learn language? What is the GAVAGAI problem in linguistics? Are there such things as primitive languages? What is the Universal Grammar? What kinds of errors do children make in the early stages of acquiring language? What is the significance of those errors for the process of language acquisition and the nature of the human mind?

This film is Part 2 of The Human Language Series. It examines the process of language acquisition, and features interviews with many prominent linguistic theorists, including Steven Pinker and Noam Chomsky.
Summary/Transcript of *Playing the Language Game*

SOME ISSUES IN THE ACQUISITION OF LANGUAGE BY CHILDREN

Questions from the beginning of the film: How do you think kids learn to talk? Answers given by people in the film:

By imitating their mothers and people around them.

I guess their parents teach them.

Children learn language from their parents or whoever’s rearing them.

I think that a baby would imitate what he hears.

(Chomsky): How do children acquire language without seeming to learn it? In advance of experience, the child is already equipped with the basic structure of any human language.

(Lasnik): How do they know so many things without life experience to go on? How do they know how to walk around? How to use their fingers? How to use grammar effortlessly? At age 3, there are many things children can’t do, but they already can use language. Just as birds do not teach their young to fly, mothers do not teach children language.

CHOMSKY HAS NEWLY RAISED THE ISSUE OF WHETHER LANGUAGE IS INNATE OR LEARNED FROM A BLANK SLATE

There are two views on how language is learned:(1) Humans have general problem solving abilities applied to all sorts of tasks, including language.(2) The brain is like every other system in biological world--it is highly differentiated into systems of special design and structure, one of which is language. Language is encoded in DNA, which is why we are good at it, like being “good” at having two arms. Walking is encoded in DNA, it is part of innate program of development--humans are good at it but are not taught it (as opposed to, say, climbing). We are designed to walk, we are not taught; likewise for language, one cannot prevent a child from acquiring language [if exposed to it in the normal way].

(Gleitman): The controversy over Chomsky’s approach arises in assuming either (1) language is wholly built in, like birdsong, or (2)wholly learned by exposure to specific properties of the environment. Why can’t it be both? In fact I take it that this is the question of modern linguistics: how much of language does a child have to learn and how much is built in?

IMITATION THEORY OF ACQUISITION VS. INNATENESS THEORY

(de Villiers): Experiments showing that children know things about language use that could not result from imitation nor have they been explicitly taught.

A child is told a story of a boy who climbed a tree and fell out. That night, while he was taking a bath, he saw a large bruise on his arm and said to his dad, I must have hurt myself when I fell this afternoon.
Question 1: When did the boy say he hurt himself?

Both small children and adults accept two answers: “when he was in the bathtub” and “when he fell from the tree.”

Question 2: When did the boy say HOW he hurt himself?

Small children and adults accept only one answer: “in the bathtub” not “when he fell from the tree.” Nobody taught the child that the presence of the word how blocks one answer.

(Slobin): People ask, “What’s the problem? Don’t children just imitate and get reinforced one way or the other?”

(Pinker): The common sense theory is that children listen to and imitate parents.

If we don’t learn by imitation, how do we learn? Don’t we learn language like other difficult things [the film shows pictures of a boy playing the trombone, learning to ride a bicycle].

(Lasnik): BUT--A child can produce sentence never before heard.

(Pinker): Listen to a 3-year old for a few minutes to know they are not imitating: “my nose is crying,” “I holded the baby rabbits,” “I’m barefoot all over.”

(Sells): Children systematically ignore attempts by parents to correct them. [film shows child saying “jimamas” for “pajamas”]. Mother observes: It doesn’t matter how often I correct him--he likes jimamas).

It’s not “wee-wee”, it’s “urinate”. OK, you’re an eight, I’m an eight.

Children don’t copy what’s done around them. They acquire language by being surrounded by it, immersed in it all the time.

(Fodor, Lasnik, Slobin, Gleitman): Children acquire by “playing the language game.” Mothers often imitate their children! Sammy at 3 ½: How much grammar does he know? Experimenter whispers to Sammy: Ask the rat what he thinks Cookie Monster eats. Sammy asks the rat puppet: “What do you think Cookie Monster eats? Sammy’s question is based on a sentence which contains another sentence embedded within it. The question then extracts the question word from that embedded sentence, puts it at the beginning of the whole sentence, and inserts the auxiliary do after it: You think Cookie Monster eats what. What do you think Cookie Monster eats? A child can produce this complex sentence at a time when he can’t tie his shoes! A child learns correct grammar without being taught. Chomsky and others do not claim that French or Japanese is built in. Experience is certainly relevant, but much beyond experience is also relevant in acquiring language.

LEARNING BY ANALOGY vs. THE INNATENESS THEORY

(Chomsky): Another view on acquisition is that we can form new, previously unheard sentences because they are like ones we have heard before.
If the child hears “I painted a red barn,” by analogy the child might produce “I painted a blue barn” or “I saw a red barn.” But if the child hears “I painted a barn red,” the child will NOT produce, by analogy, “I saw a barn red.”

(Chomsky): From simple examples like these, we can see that concepts like analogy are not going to do much work. Some kind of mental computation is going on.

Based on “Taro ate a sandwich,” we can then say “Taro ate.” BUT based on “Taro ate his shoe,” we CANNOT, by analogy, say “Taro ate.” Based on “John eats tomatoes” we can say “John eats,” meaning “John eats something.” BUT based on “John grows tomatoes,” we CANNOT, by analogy, say “John grows,” meaning “John grows something.” The analogy is wildly broken, yet we all interpret such sentences correctly instantaneously, the implication being that we somehow, innately, recognize various word categories.

AT WHAT AGE DOES A CHILD BEGIN TO ACQUIRE GRAMMAR?

(Gleitman): When does child know difference between subject and object? For example, in “the cow kicked the horse,” the cow does the kicking and the horse gets kicked.

(Hirsh-Pasek & Golinkoff): In an experiment at Temple University, small infants with little or no active language see two TV screens with two characters in opposite roles as subject and object. The children hear utterances such as, “Find Cookie Monster washing Big Bird,” or “Where is Big Bird feeding Cookie Monster?” Children as young as 16 months with only a two word active vocabulary were found to stare at the correct TV screen on hearing the utterance.

(Chomsky): When a child learns language, the child is creating language, language is growing in the child’s mind.

This may hold for grammar, but the child does not create WORDS.

HOW DO CHILDREN LEARN THE MEANINGS OF WORDS?

(Gleitman): It cannot be a satisfactory hypothesis to say that a child learns the meaning of “car” because the mother points to a car and says, “car.”

[The film describes Nunu, a furry dog with black, shiny nostrils]: de Villiers’ son used this word to refer to the family dog, a picture of a Cocker Spaniel, a black and white cow, pink furry slippers, and a salad with olives in it. The trick of word meaning is correctly applying it to things other than original referent. “Dog” correctly applies to Fido, Rex, etc. but not to Felix (who is a cat).

A word applies to a concept; but what’s a concept? Consider the word “house” [the film shows pictures of a lighthouse, a doll house, an outhouse, etc.]. Or the word “clothespin” [the film shows a huge clothespin sculpture vs. a pencil (an object closer in size and materials than the sculpture); how does child pick out things which are relevantly alike?

Is a dog alive? [children in the film are asked the question] (yes, because it wags its tail, has eyes, legs, etc.); is a worm alive? (yes, it moves); is a car alive? (after all, it moves)

THE GAVAGAI PROBLEM
Interviewer asks people in the street what she means when she points to a billboard with a big picture of a rabbit and says, “Gavagai.” Most say “rabbit,” but other concepts such as rabbit parts, rabbithood, ears, fur, etc. do not come to mind.

Say the word “flimmick” to a child while showing her an object, and the child assumes that the object is called a flimmick regardless of its current state, e.g. whether opened or closed.

For a child to learn a meaning, it would be helpful to have certain inherited assumptions. Children are biased learners. They are not open minded considering all the possible hypotheses about what a word could mean and waiting for the evidence to come in. One of the assumptions that they make about what words could mean is that they start out expecting that object labels refer to the whole object.

Two such assumptions are THE WHOLE OBJECT ASSUMPTION: “gavagai” will mean the whole rabbit, not some of its attributes or parts, and THE MUTUAL EXCLUSIVITY ASSUMPTION: objects have one and only one name; if two names are given to identical objects, the assumption will be that either only one of the names is correct or that there is a difference between the objects.

UNIVERSAL GRAMMAR

(Lasnik): Words are learned individually; when you utter a sentence you are participating in an act of creation. [The film shows a little boy talking about going to Puerto Rico.]

(Aronoff): A finite number of words can make up an infinite number of sentences.

(Chomsky): The richness of the concepts we employ and the minimal character of the evidence on which we derive them essentially leaves no alternative but that these concepts are available prior to experience and we’re simply selecting them out of a store, and that means we are born with them.

LANGUAGE IN PAPUA NEW GUINEA

(John Lynch, U. of Papua New Guinea): Papua New Guinea has point-one percent [0.1%] of the world’s population but about 20% of the world’s languages. Some of these languages are as different from each other as English and Chinese.

(Carl Whitehead, who lived among the Menya for 10 years): The Menya never invented the wheel, but they speak a language as complex as any in world. A single verb can have 2000-3000 forms. There is a complex modal system. Whitehead notes a verb which has many different translations depending on what object it is used with. In looking at world’s language, we find only a small number of possibilities for grammatical organization, e.g. position of verb as a marker of what is the subject and what is the object.

In studying a language, you notice differences, but what Chomsky noticed is how similar they all are.

Words in Siberian Yupik Eskimo look long because of affixes--this is perhaps the most inflected language of world. The speaker in the film gives an example of a single word meaning “without us being sprayed upon (by water when traveling by boat).” Slobin again cites the “two great ground plans” in the way languages are structured in order to convey meaning: (1) ordering words to show
who did what to whom, (2) marking individual words with affixes to show on the words themselves who did what to whom. In advance of experience, the child is already equipped with the understanding of the basic structure of any human language. So we know even in advance of inquiry that there’s going to be a fundamental invariant core to language.

SOME EXAMPLES OF FUNDAMENTAL PROPERTIES OF HUMAN LANGUAGE

Things that are nouns and verbs [a basic division of words into those which refer to objects and those which refer to actions], ways to make things negative [a little boy in the film says “no way Jose”), ways to ask a question [the film shows an example from American Sign Language, showing that these characteristics are part of a general language ability, not just speech], a distinction between one and more than one [the film shows an example in Eskimo, which has distinct forms for one object, two objects, and more than two objects].

Each language has obligatory distinctions (masculine/feminine, singular/plural, definite/indefinite, past/present, etc.); this is the stock of categories used to schematize experience. [The last point could be better explained in the film. The idea is that there are many distinctions which are natural and are found in many languages around the world. The fact that they pop up independently in far-flung languages spoken in vastly different cultures shows that they must be part of human cognitive structure, not accidental similarities or features imposed by culture. Not all languages have ways in their grammars or vocabularies to make all such distinctions overtly, but they would seem natural to any human who is learning languages which make them. One could also imagine unnatural distinctions which no language would be likely to make, e.g. special tense markers for verbs depending on whether they are spoken in the light or in the dark, different word orders depending on whether the subject/actor is a four-legged or two-legged creature].

Chomsky asks why all languages are cut from the same mold; [answer] the brain is prewired to accept only certain properties.

(Gleitman): Those things which are true of all languages are the candidates for what the child comes into world knowing about the NATURE of the language to which he is being exposed.

(Pinker): What children have to pick up is not the fact that languages have rules, but rather the particular versions of the rules the language they are acquiring has, e.g. whether the ordering of words put the verb before the object or the object before the verb.

CHILDREN’S ERRORS

Are they really errors? Children are very good at finding the rules in the data around them and overgeneralizing them. Children will try to make a language follow a system.

In the film, children are given pictures and one child is asked “What did your person do before they went to school?” The child responds, “They drived to school.” A flock of geese fly by and a little girl is asked “What’s going overhead?” She responds “Geeses.” An adult says to child “Ruth says that they’re foots, I say that they’re feet. What do you say they are?” The child responds, “I say they’re foots.” Deaf children learn at the same age as hearing children and make the same kinds of overgeneralizations.
Children are looking for some deep principles. They follow those principles. If the language chooses to violate those principles now and then, so much the worse for the language.

Yet children never make mistakes that seem very reasonable that they might make.

(Pinker): Children might ask the question, “What did you eat your eggs with?” but no child has ever asked “What did you eat your eggs and?” which is a straightforward extension of “I ate ham and eggs.” The utterance “What did you eat your eggs and” violates a restriction, which is apparently universal to human language, that you cannot question just one item from a number of items joined by the word meaning “and.”

You can say “I baked a cake for Mary,” or “I baked Mary a cake.” But, while you can say “I painted the house for 6 hours,” you could never say “I painted 6 hours the house.”

Question: Why does the child not make these leaps? Answer: When we imagine a reasonable sort of mistake for a child to make but never find a child making it, we assume that the mistake would violate some principle of Universal Grammar. Universal Grammar is what the child already knew and didn’t have to learn, and that’s why children never violate those rules.

A child shaking a box says, “What do you think what’s in here?” This is a mistake in English, but there are languages that form the comparable question in just this way.

SOME CONCLUSIONS ABOUT INNATENESS AND ACQUISITION OF LANGUAGE

3 year olds must have innate knowledge of what linguistic structure is like--we don’t let them drive or vote, we don’t try to teach them long division, BUT they learn to talk by listening to other people talk--they make few errors and eventually correct them without having been corrected. Children never make certain errors: in less than two years, they can accurately produce an infinite number of sentences. There are a number of general conclusions resulting from study of acquisition by children:

(1) Awe at the complexity of the mind in the structures child constructs based on slim resources.

(2) This ability must be shared across the species because children, regardless of culture environment, etc., all acquire language in the same way and at the same rate without instruction. This ability is deeply ingrained in the human species regardless of environment. In this sense, Stephen Pinker suggests that all 5,000 of the world’s languages could be described as variants (i.e., dialects) of one human language.
TEST QUESTIONS

1. As portrayed in the film Playing the Language Game, the linguist Stephen Pinker suggests that all 5,000 of the world’s languages could be described as ______________________ of one human language.

2. As Conrad Kottak suggests in Cultural Anthropology, a(n) ______________ is a variant of a language with some features that are phonologically, morphologically, and/or syntactically distinctive, but that is still mutually intelligible with other variants of the language (and that is equally effective at communication in comparison with other variants).

3. As explained in the film Playing the Language Game, every element (i.e., every phonological, morphological, and syntactical element) of every language ______________ [is or is not?] innate, and children ______________ [do or do not?] learn to create sentences by analogy.

4. The component of descriptive linguistics which studies the sounds used in speech (i.e., which sounds are present and which are significant), is called ______________________.

5. A pair of words in a given language that have different meanings but that only have a single phonetic difference between them is called a(n) ______________________.

6. As explained in the film Playing the Language Game, the “GAVAGAI” problem demonstrates that children ______________ [do or do not?] make inborn assumptions about object labels, and they ______________ [are or are not?] biased learners.

7. As explained in the film Playing the Language Game, the “GAVAGAI” problem demonstrates that children make two inborn assumptions about object labels, namely the __________________________________ assumption and the __________________________________ principle.

8. As explained in the film Colorless Green Ideas, since each language is a particular example of the same kind of system, different human languages are analogous to different human ______________.

9. As explained in the film Playing the Language Game, there is/are a total of ______________ possible interpretation(s) of the sentence “When did the boy say how he hurt himself?”, and children ______________ [do or do not?] know that without being taught.

10. As described in the film Colorless Green Ideas, the linguist who created a modern revolution in linguistics with his book Syntactic Structures was ______________.

11. The ability to generate an unlimited number of new combinations to communicate ideas that are comprehensible to other speakers is called ______________________.
12. The description and analysis of non-lexical sounds that nevertheless convey meaning in a cultural context is called ____________________________.

13. The ability to talk about things other than present environmental stimuli, including the past, the future, the imaginary, and the hypothetical, is called ____________________________.

14. As explained in the film Colorless Green Ideas, the number of words that are used in a language is, in practice, ____________________________ [limited or unlimited?], and the number of sentences that can be spoken in a language is practically ____________________________ [finite or infinite?].

15. The aspirated-h phone {p\(^h\)} is not phonemic in English, but it is phonemic in ____________________________ [what language?].

16. A(n) ____________________________ is a system of oral communication that consists of a limited number of meaningful sounds that can only be produced when particular environmental stimuli are encountered.

17. As described in the film Colorless Green Ideas, the longest word in the English language ____________________________ [is or is not?] “antidisestablishmentarianism,” and it ____________________________ [is or is not?] easy to give readily understood directions to someone using language.

18. A sound contrast that makes for a difference in meaning in a given language is called a(n) ____________________________.

19. The word “apodictic,” which is used as an example in the film Colorless Green Ideas, means ____________________________.

20. The English language uses a total of approximately ____________________________ phones.

21. The component of descriptive linguistics which studies the way sounds are combined to make meaningful forms is called ____________________________.

22. As described in the film Playing the Language Game, children’s linguistic errors result from ____________________________ [overgeneralization or undergeneralization?] of ____________________________ [learned or innate?] rules.

23. A(n) ____________________________ is a minimal unit of sound that carries meaning only when attached to another minimal unit of meaningful sound.

24. Complete the following analogy between Ethnology and Linguistics: the adjective ETIC is to the adjective EMIC as the noun ____________________________ is to the noun ____________________________.
25. Which of the following is NOT an example of a minimal pair in English? (a) bat/vat (b) gnat/mat (c) tin/din (d) IMport/imPORT (e) pin/spin

26. As explained in the film Playing the Language Game, when children do make linguistic errors, they [do or do not?] violate the rules of Universal Grammar, and Universal Grammar [does or does not?] include rules about the distinctions between singulars and plurals.

27. A minimal unit of sound that is described in terms of its manner of articulation (e.g., “dental fricative” or “bilabial stop”) is called a(n) __________________________.

28. A(n) __________________________ is a system of oral communication used exclusively by humans that has several distinctive features, including productivity and displacement.

29. As explained in the film Colorless Green Ideas, there are two basic ground plans used by languages as a means of syntax: the __________________________ ground plan, which is the predominant plan used in English, and the __________________________ ground plan, which is the predominant plan used in Latin.

30. As described in the film Playing the Language Game, the region of Melanesia, where the country of Papua New Guinea is found, has ___________ percent of the world’s population and ___________ percent of the world’s languages.

31. All morphemes [are or are not?] words, and all words ___________ [are or are not?] single morphemes.

32. As described in the film Playing the Language Game, what are the elements of the Universal Grammar?

33. Complete the following analogy between Ethnology and Linguistics: the adjective EMIC is to the adjective ETIC as the noun __________________________ is to the noun __________________________.

34. __________________________ is the term used to describe the list of all the morphemes in a given language.

35. The human articulatory mechanism is capable of producing a total of approximately __________________________ phones.

36. A(n) __________________________ is a minimal unit of sound that conveys meaning in and of itself without being attached to another minimal meaningful unit of sound.
37. As explained in the film *Playing the Language Game*, mothers [do or do not?] teach their children to talk, and language acquisition [is or is not?] a process of physical growth.

38. As explained in the film *Colorless Green Ideas*, objects such as spirals [can or cannot?] be easily described using language, and abstract thought [can or cannot?] be readily expressed using language.

39. The component of descriptive linguistics which studies the rules governing the order and arrangement of words in sentences is called ____________________________.

40. The smallest unit of sound that carries meaning in and of itself is called a(n) ____________________________.

41. Complete the following analogy between Ethnology and Linguistics: the adjective ETIC is to the adjective EMIC as the adjective ____________________________ is to the adjective ____________________________.

42. As described in the film *Playing the Language Game*, the earliest age at which children have been shown to know basic grammar (i.e., to recognize the difference between subject and object) is ____________________________.

43. As explained in the film *Playing the Language Game*, there is/are a total of [are or are not?] possible interpretation(s) of the sentence “When did the boy say he hurt himself?”, and children [do or do not?] know that without being taught.

44. Complete the following analogy between Ethnology and Linguistics: the adjective EMIC is to the adjective ETIC as the adjective ____________________________ is to the adjective ____________________________.

45. As explained in the film *Playing the Language Game*, there [are or are not?] such things as primitive languages, and all languages [do or do not?] have rules.

46. In English, “less” is a(n) ____________________________.

47. In English, “re” is a(n) ____________________________.

48. In English, “like” is a(n) ____________________________.

49. In English, “s” is a(n) ____________________________.

50. In American English, “uh-huh” is an example of a(n) ____________________________.
LEARNING OBJECTIVES

At the completion of this unit, you will be able to describe several examples of the kinds of phenomena studied under sociolinguistics (including cultural differences, style shifting, diglossia, gender speech contrasts, and the relationship between euphemisms and cultural values), and you will be able to describe the relationship between language and cognition. You will also be able to describe the essential elements of historical linguistics, to include defining language families and describing their significance. Finally, you will be able to describe the principal forms of writing, to include pictographic, ideographic, logographic, and phonetic writing.
I. Sociolinguistics

the study of language in its social context—i.e., the description and analysis of the relationships between social and linguistic variation

A. Cultural Differences

languages mark cultural boundaries, and dialects mark sub-cultural boundaries

dialect: a variant of a language with some features that are phonologically, morphologically, and/or syntactically distinctive, but that is still mutually intelligible with other variants of the language

B. Style Shifting

making phonological, morphological, and/or syntactical alterations that are appropriate to the social context (e.g., slang, profanity)

C. Diglossia

the ability to switch from one dialect to another according to social context

D. Gender Speech Contrasts

differences in phonology, morphology, and syntax between males and females

elements from American English: profanity, adjectives/adverbs, color vocabulary

E. Euphemisms and Cultural Values

a euphemism is a socially acceptable way of referring to sensitive or unpleasant topics; all cultures use euphemisms, but not for the same topics—euphemisms indicate areas of cultural sensitivity (values)

Examples of American English Euphemisms: Death, Toilet Habits, Sexual Activity
II. Historical Linguistics

the study of language change over time, including the identification and analysis of language families

**Language Family**
a group of languages that share some common features as a result of having evolved from a common origin; there are over 5,000 languages in the world today, which linguists have divided into 200 language families

for example, the Indo-European language family includes approximately 100 languages divided into some 10 branches or sub-families; Indo-European languages are spoken by about 50% of the world’s population

**Daughter Language**
a contemporary language that can be shown to have evolved from an ancestral parent language (e.g., French, Spanish, Italian, Portuguese, and Romanian are daughter languages of Latin); a language that has no known familial relationship is called a language isolate (e.g., Euskara, spoken by the Basque people in the Pyrenees Mountains on the border between Spain & France)

**Protolanguage**
the original parent language from which daughter languages evolve (e.g., the protolanguage of German, English, Dutch, Danish, and Swedish is Proto-Germanic)

III. Writing

an imperfect and incomplete representation of language which has one major advantage over spoken language: for communication to occur in spoken language, the speaker and listener must be in the same place at the same time—but with writing, communication can occur when the writer and the reader are in different places and/or times, and thus the communication can be permanent rather than ephemeral

**A. Pictographic Writing**
a form of writing that uses recognizable pictures to communicate information—although potentially capable of communicating information among speakers of different languages, it is limited to conveying very small amounts of information, principally concrete nouns

**B. Ideographic Writing**
a form of writing that uses conventional symbols (called ideographs or ideograms) to represent ideas or concepts—the meaning of the symbols may vary depending on context
C. Logographic Writing

a form of writing that uses conventional symbols (called logographs or logograms) to represent words—pure logographic writing necessarily requires a large number of symbols (we use a few logographs in our writing system, such as $, £, ©, &, @, and our numerals, including 1, 2, 3, 4, 5, 6, 7, 8, and 9)

D. Phonetic Writing

a form of writing that uses conventional symbols to represent the sounds used in speech—phonetic writing can be either syllabic or alphabetic

1. Syllabic Writing

a form of writing that uses conventional symbols to represent syllables

2. Alphabetic Writing

a form of writing that uses conventional symbols to represent phones

The following additional lecture notes are intended especially for internet students (although they may also be helpful to classroom students who were absent from the lecture presentation).

The Lecture Outlines for this unit are largely self-explanatory, especially when read in conjunction with the assigned chapter in Conrad Kottak’s Cultural Anthropology. There are a couple of points, however, that I further elaborate when I present this material in the classroom:

When discussing examples of the kinds of phenomena that cultural anthropologists and linguistics study under the heading of “sociolinguistics,” I explain that style shifting and diglossia are not the same. Everyone in every culture is capable of shifting the style of their speech (from formal to profane, for example, or from elegant to slangy), but only people who speak more than one dialect of the same language are capable of diglossia. I only speak one dialect of English, for example, although I can speak various styles of English—but the British Virgin Islanders among whom I conducted ethnographic research many years ago are capable of diglossia, because they can speak both a “Standard British” dialect of English and a “West Indian” dialect (they shift back and forth depending on the social context, using the West Indian dialect among themselves but the British dialect when speaking to tourists).
When discussing Gender Speech Contrasts, I explain that men and women speak differently in every culture in the world, regardless of the language they're speaking—the particular differences, however, vary from one language to another. Thus in American English, for example, women are much more likely than men to use such terms as “cute,” “lovely,” “divine,” “charming,” and so forth, while men are more likely to use profanity than women (especially gratuitous profanity—that is, profanity that’s not inspired by intense emotion, but is simply used as a means of adding color or distinctiveness to an utterance). At the same time, most women have a much greater color vocabulary than most men in contemporary American culture, stemming from the greater interest women are likely to have in such topics as fashion, cosmetics, and interior design; thus women are more likely than men to know the meanings of such terms as “chartreuse,” “mauve,” “fuchsia,” “magenta,” “vermillion,” and so on.

When discussing Euphemisms and Cultural Values, I explain that the verb “to die” or the noun “death,” when used to refer to human beings, are not euphemistic—i.e., they are direct, straightforward, ordinary words that mean precisely what they say: the person died. When talking about the death of a friend or loved one, however, we’re more likely in American English to use some euphemism that softens the emotional impact; thus we say the person “passed away” or that Mary “lost her husband” who “went to his reward” or is “no longer among the living” or may be simply “gone” (or, if we’re being comical, which is still a means of avoiding the emotional impact, that John “kicked the bucket”).

Similarly, when Americans talk about the toilet habits of human beings—say urination, for example—they employ a wide variety of euphemisms. The term “urination” isn’t technically a euphemism, but it is a term that has clinical, medical, or scientific connotations rather than a straightforward, ordinary word—no one excuses themselves from the table at a restaurant, for example, by telling their companions that they have to go “urinate.” To describe that activity, Americans can use locational euphemisms (for example, they might go to the “bathroom” or the “powder room,” even though they don’t want to bathe and powdering their nose is not the primary reason for the trip), or they can use childish euphemisms (“pee-pee,” “wee-wee,” “tinkle,” etc). Americans also have the option, depending on the context, of using vulgar euphemisms (“piss,” “take a leak,” etc.). The striking fact, however, is that Americans have such a highly developed value for privacy when it comes to many bodily functions that they don’t have any ordinary, straightforward term to refer to this ordinary bodily function; when Americans talk about urination, they have no choice but to use euphemistic terms with clinical, medical, scientific, metaphorical, childish, or vulgar connotations.

Exactly the same thing is true for sexual behavior. When talking about heterosexual intercourse, for example, Americans can use terms with clinical/scientific connotations (“coitus,” “copulation,” or even “heterosexual intercourse,” etc.), or they can use locational metaphors (“go to bed,” even thought they might “go to bed” on the living room floor or the kitchen counter). Depending on the context, Americans might use a romantic euphemism (“make love”), but that phrase would be unlikely to accurately describe the activity that takes place between a prostitute and her client. Americans can also use ambiguous or misleading euphemisms (“have sex with” or “sleep with,” even though we’re still arguing about whether Bill Clinton and Monica Lewinsky “had sex,” and most people find it difficult to engage in heterosexual intercourse while they’re asleep). As
another option, Americans can use vulgarisms ("screw," "bang," and a couple of others that you’ve probably heard before). Again, however, American English lacks any single, straightforward, ordinary term to refer to this familiar (and, indeed, highly popular) activity.

Finally, there are a handful of Test Questions that ask you to identify the family and subfamily of some familiar languages. The answers to those questions can be found in Conrad Kottak’s *Cultural Anthropology*, but those questions can also be answered by reviewing the information presented in the figure below, which summarizes the Indo-European language family (the names that appear on the branches themselves are the names of either contemporary or extinct *languages*—the labels that appear in the green leafy areas surrounding the branches are the names of particular *sub-families*).
FILM SYNOPSIS

With and Without Words

The first of the two films that accompany this unit is Part Three of The Human Language Series entitled With and Without Words.

With and Without Words explores the evolutionary foundations of human language and describes the nature of language as a unique communication system. After watching the film, you should be able to answer these questions: Are language and communication the same? Do all animals communicate? Do all animals have language? What are signals? Do humans use them? How do humans communicate non-verbally? What is the relationship between emotions and facial expressions? What are the advantages and disadvantages of the gesture system of communication? What roles do consonants and vowels play in human speech? What sounds are used in human speech?

With and Without Words begins with the observation that language is the most human characteristic there is—it’s something that’s not shared with any other organism. The film explains that language is not the same as communication (after all, all animal species communicate in some fashion, but only humans have language—and humans communicate in other ways besides language). We communicate important information via our facial expressions and our “body talk,” for example, and we derive those forms of communication from our animal ancestors. The question of interest to linguists is, why and how did our species evolve language?

To begin to answer the question, the film shows evolutionary biologist Stephen Jay Gould explaining that language is an evolved capacity. Language is analogous to DNA, which is itself a kind of language (DNA is the single grammar that governs all life on earth). Thus the film poses several interrelated questions: What is language? How did we get it? Does it spring from our genetic makeup?
Communication systems other than human language tend to rely on signals, which are keyed to particular needs and wants (think, for example, of a peacock spreading its tail to attract prospective mates). Humans also use signals, because signals are efficient for certain kinds of communication—but signals are very limited (negative statements, for example, can only be clearly communicated in language). Nevertheless, much of human communication involves the use of non-verbal signals; indeed, the non-verbal component of human communication can sometimes account for as much as 90% of what’s being communicated.

The film offers several examples. Our dress, posture, grooming, and walk all communicate important information about ourselves to others. Sociolinguists observe that men and women orient themselves differently when talking with members of the same sex: two women typically face each other head on when talking, but two men are likely to stand sideways to one another, each facing the world.

Hand gestures are a good illustration of non-verbal communication. Some gestures are universal—the gesture for “come here,” for example, is very similar in every culture in the world. Gesture is speech in its most primitive form, because it shows instantaneous thought. Everybody gestures, although people who gesture less tend to make more elaborate sentences, and vice versa. Gesture systems are analogical, while speech is digital (i.e., each gesture is an analogue for a particular concept, whereas each utterance in speech encodes the concept in a set of arbitrary sounds; that’s why gestures are often very similar from one culture to another, whereas different cultures use completely different sounds to convey the same ideas). Gestures are always synchronized with speech, and humans are very good at observing the gestures of a person who is speaking and discerning which hand movements are communications and which are irrelevant—we’re good at screening out everything but the message.

Stephen Jay Gould summarizes this section of the film by observing that evolution (the process that produced human language) has no purpose in mind—instead, it simply tinkers with the tools that are available in a blind process of moment-by-moment adaptation. The results can be spectacular, however, and there’s no doubt that language is an evolutionary product; indeed, the fact that evolution has occurred (and not just the evolution of language, but the evolution of all forms of life, including humans) is as well-established in science as the fact that the earth revolves around the sun.

The film goes on to explain that human facial expressions are an extremely important means of communication. Humans are capable of more than 10,000 possible expressions, of which some 2,000 to 3,000 have to do with emotion. Those expressions reveal our emotions to the world, but not the content of our minds—i.e., facial expressions show others how we feel, but not what we think (the advantage of language is that we can use it to tell others what we think).

The film presents dramatic evidence from a classic 1967 of facial expression among a New Guinea people who had never been exposed to the outside world. Their expressions are exactly like ours, and they indicate exactly the same underlying emotions—which is strong evidence for the innate, universal character of facial expressions. Cross-cultural anthropological research has
demonstrated that six or perhaps seven fundamental emotions have universal facial expressions: enjoyment, anger, fear, sadness, disgust, surprise, and contempt.

All human languages are composed of consonants and vowels. Vowels carry the sound of human speech—they can be sung, shouted, and sustained, and it would be impossible to speak without them; consonants are ways of turning the vowels on and off. Humans have a capacity for a total of about 50 (fifty) vowels, but all human languages tend to focus on five particular vowels (the ones we traditionally know of as “a, e, i, o and u”). Some vowels, such as the vowel that appears in the English word “bird,” are very rare, and occur in less than 1% of all languages.

The film explains that the phenomenon of “co-articulation” is an essential aspect of human language. Co-articulation involves the effect of the preceding sound on the following sound, and essentially allows humans to compress different sounds together into a single recognizable sound. As language evolved in the human species, the speed of communication would have been a major factor in human survival (imagine taking a long time to decode the meaning of the sounds “look out for that bear!”); co-articulation makes it possible for humans to comprehend up to 500 words per minute.

Each language uses, on average, about 40 sounds from among the several thousand possible sounds that humans can make. Every language, however, chooses its 40 or so sounds from a possible list that’s much smaller than several thousand (a grand total of approximately 80 possible sounds goes into all human languages). No language uses whistling as part of its phonology, for example, and no language uses burbling (the raspberry sound)—which implies that language is hard-wired in the human brain, with a narrow range of options. (Although it is true that unusual sounds do show up in a handful of languages, such as clicks—-but while most adults who speak non-clicking languages have trouble imitating the clicking sounds from languages that do have clicks, every baby in the world can make them.)

How did human language begin? The film explains that nobody knows for sure, but there is one thing we do know: human beings didn’t invent language, any more than they invented their circulatory systems. Instead, human language emerged as an adaptation, produced by natural selection (some anthropologists estimate that human language as we know it is about 100,000 years old).
FILM SYNOPSIS

Cracking the Maya Code

The second of the two films that accompany this unit is a NOVA episode entitled *Cracking the Maya Code*. *Cracking the Maya Code* describes the ingenious series of breakthroughs that finally cracked the code of Mayan writing after centuries of research and debate. It’s a remarkable story, because unlike the Rosetta Stone, which unlocked the secrets of Egyptian hieroglyphs in practically one fell swoop, deciphering the Maya script involved a long series of hunches and tantalizing insights as well as false leads, blind alleys, and heated disagreements among scholars.

Transcript of *Cracking the Maya Code*

**NARRATOR:** Imagine explorers arriving to find our cities deserted; our books have perished in some unknown catastrophe; all that is left to speak for us are the written words we have carved in stone. The travelers cannot make sense of our mysterious script, but if they could, would they comprehend who we were?

In the jungles of southern Mexico and Central America, the ancient ruins of the Maya posed such a mystery. They revealed a civilization of stunning achievements, created in isolation from Europe and Asia. Their cities were full of strange inscriptions, fantastic, twisting forms called hieroglyphs. They were carved on monuments and objects, painted on pottery and written in bark-paper books.

For centuries, the hieroglyphs confounded explorers. What secrets did they hold? Were they merely pictures and symbols, or, in fact, true writing, expressing an ancient language?

**MICHAEL D. COE** (Author, *Breaking the Maya Code*): People threw their hands up and said, "Nobody's ever going to crack this script. It just can't be done."

**NARRATOR:** The quest would obsess artists and adventurers, archeologists and linguists, and the youngest recipient ever of the MacArthur genius award.

**DAVID STUART** (Epigrapher, University of Texas at Austin): It became very clear to me that the real task of code-breaking was getting through this morass of the tangled visuals of the script.

**NARRATOR:** After centuries of struggle, the stories of the Maya scribes are coming to life.
MICHAEL COE: We began to see blood everywhere in the hieroglyphs. It was a rather darker view of the Maya that shocked a lot of people.

NARRATOR: As the hieroglyphs reveal their meaning, a history of a lost world is emerging, transforming our view of the ancient Maya.

DAVID STUART: These were literate people. They had these fantastic stories to tell. And we really got this amazing understanding of how the Maya saw their world.

NARRATOR: Up next on NOVA, Cracking the Maya Code.

NARRATOR: In the 16th century, the flames of the Spanish Inquisition scorched the New World, decimating the Maya civilization. One blaze was ignited by Diego de Landa, a zealous friar, bent on destroying one of the most original writing systems ever invented, Maya hieroglyphics.

GEORGE STUART (Historian, Center for Maya Research): He looked at these writings of the Maya, and he saw them as tools of the devil. And Landa felt he had to take a firm, official political stance.

NARRATOR: Landa's mission was to convert the Maya to Catholicism in the Yucatan peninsula. Upon learning they were still making offerings to ancient gods, he arrested and tortured thousands of Maya for "crimes of devil worship."

MICHAEL COE: He inflicted a primitive inquisition on them that was incredible in its ferocity, at the same time...while destroying everything that he could find that was what he would call superstition, in other words, a good part of their culture.

GEORGE STUART: So they had a great ceremony of destruction in the plaza and burned hundreds, maybe thousands of books. We will never know. And, of course, out of all of that, only four books or partial books survived.

NARRATOR: Maya scribes were forced to learn European script.

MICHAEL COE: The writing system totally died out in the centuries that followed the Spanish conquest. I mean, people were probably burned at the stake for writing in the old system. By the 18th century, I don't think anybody could write.

NARRATOR: Knowledge of the ancient Maya script soon vanished. It would take centuries of struggle before the hieroglyphs could be read again.

Today in the highlands of Guatemala, Maya villagers still make offerings to ancient gods. They seek guidance about favorable days for planting and harvesting, business and travel, courtship and
marriage. Although they hold onto their heritage, the Maya have been a people cut off from the written words of their ancestors.

Now the decipherment of the hieroglyphs is bringing their past to life.

**WILLIAM FASH** (Archeologist, Harvard University): The hieroglyphic records have so many stories to tell about just who the actors were on the stage of Maya history and what the major events were.

**LINDA SCHELE** (Epigrapher, University of Texas, Austin/Deceased 1998): Those glyphs give the Maya 1,500 years of history, written in the words of their ancestors, not in the words of white people from Europe.

**SIMON MARTIN** (Epigrapher, University of Pennsylvania Museum): This is our one and only opportunity to peer into the Americas before the arrival of Europeans and hear these people speaking to us.

**NARRATOR:** Since ancient times, the Maya have lived in a region that extends from southern Mexico through much of Central America. The heart of their civilization lay between the highlands of Guatemala and the plains of the Yucatan, much of it a vast region of dense jungle.

Here, around A.D. 200, they began building their great cities: Tikal, Copán and Palenque.

They were renowned for their monumental architecture. Pyramids and temples towered over plazas and ball courts, where kings ascended to the throne and warrior athletes competed for their lives.

**WILLIAM FASH:** There were dramatic kinds of ceremonies and public events for public consumption, the exercise of power in its most dramatic forms.

**NARRATOR:** Maya civilization thrived for over 2,000 years, distinguished by a sophisticated culture.

**LINDA SCHELE:** The art involves a level of graphic imagination and expertise that is unparalleled.

**NARRATOR:** As Europe entered the Dark Ages, these city-states reached the height of their glory, some supporting hundreds of thousands of people.

**MICHAEL COE:** They were the greatest of all new civilizations, and it's the only fully literate society in the New World.
NARRATOR: Yet mysteriously, in the ninth century, the Maya abandoned many of their cities. The temples and pyramids in the central lowlands were swallowed by the forest and forgotten.

Almost 1,000 years later, a Spanish explorer named Jose Calderon stumbled upon the jungle city of Palenque. Inside its abandoned temples, Calderon and his men found huge stone tablets carved with figures and hieroglyphic writing.

DAVID STUART: It's really clear that they're looking at something that's totally alien to them, and they're wrestling with this idea, whether it's picture writing or whether it's something more than that.

NARRATOR: As news of the strange texts spread, French artist Jean-Frederick Waldeck traveled to Palenque, in 1832, to sketch its hieroglyphs. Believing that Babylonians, Phoenicians or Hindus had built the Maya cities, Waldeck's drawings even included Indian elephants.

DAVID STUART: We now know that the Maya weren't even writing anything that visually looked like an elephant. He was not understanding the forms of the signs. This is the theme that you see time and time again with artists trying to record Maya inscriptions, up until the 20th century.

NARRATOR: As more sites were discovered, explorers did their best to draw the unfamiliar glyphs, but their work lacked the detail needed for decipherment.

Everything would change in the 1880s, when Alfred Maudslay arrived with a glass-plate camera.

GEORGE STUART: Maudslay was taking full advantage of the new developments in photography. He had gone into all the sites, fully equipped with large format glass-plate negatives—an immense effort, these caravans of equipment.

WILLIAM FASH: You see these lovely photographs with the entire great plaza cleared. Well, it wasn't that way when he got there. He had to set a lot of people to work, clearing these areas, so that he could get decent photographs.

NARRATOR: Maudslay's photos captured the hieroglyphs in exquisite detail.

MICHAEL COE: If you're going to deal with an ancient body of inscriptions and try to crack an unknown script, you have to have a really good record. And he was the first one to make it.

NARRATOR: But unknown to many scholars poring over Maudslay's photos, the work of decipherment had already begun, with the rediscovery of Maya books that had survived the Spanish conquest.

Three surfaced in Madrid, Paris and Mexico, but the most exquisite manuscript made its way to the Royal Library of Dresden, Germany. It is called the Dresden Codex.
It was forgotten until 1810, when a massive volume on the Americas was published in Paris and included five of its pages. Its strange hieroglyphs pushed an eccentric scholar, Constantine Rafinesque to attempt to try and crack the Maya code.

**MICHAEL COE:** He looked at these bar and dot numbers, and he said, "You never get more than four dots...a bar probably stands for five."

One would be one dot; two would be two dots; three would be three dots; four, four dots; then you'd have a bar. And then a dot would make it six; two dots and a bar, a seven.

And that was the first time anyone had ever deciphered a Maya hieroglyph. That is the beginning of the decipherment.

**NARRATOR:** The quest would move to Dresden Germany, when Ernst Forstemann, a librarian, stumbled upon the *Dresden Codex*. The priceless book had sat in the library, overlooked, for decades.

**GEORGE STUART:** Can you imagine being able to pull out one of the most important primary sources in the prehistory of the New World and to have it there in front of you and just look at it and work with it?

**NARRATOR:** Forstemann discovered the Maya had developed a calendar to mark time and even pursued astronomy. In the *Dresden Codex*, he found precise predictions for the dates of lunar and solar eclipses. And there were tables tracking the cycles of the planet Venus, which was linked with warfare.

But Forstemann's greatest feat came when he figured out that very large numbers in the *Dresden Codex* were counts back in time to a specific date, to a date the Maya believed the universe was created: 4 Ahau 8 Cumku.

By correlating this to the Western calendar date of August 13th, 3114 B.C., archaeologists could now date the carvings on stone monuments, called "stelae."

One expert in dating Maya glyphs was J. Eric Thompson, a brilliant British archeologist and epigrapher.

**DAVID STUART:** Thompson dominated Maya glyph studies from the 1930s up until the 1960s. He was the figure. No one else at that time had any idea what Maya writing really was.

**NARRATOR:** Thompson created a meticulous classification system, assigning what scholars called Thompson- or T-numbers to over 800 Maya signs.
After living among the Maya in Mexico and Belize, he came to deeply admire their culture.

**GEORGE STUART:** He created a kind of a picture of the Maya as a gentle folk, rather unlike anybody else that ever lived in the world, who were constantly gazing toward the skies and obsessed with astronomy and time.

**NARRATOR:** Thompson's view of the Maya was influenced by his experiences in World War I.

**MICHAEL COE:** Anybody who had actually been in the trenches in the First World War never really wanted to hear anything but peace after that. So he had a mindset that was looking for a peaceful people.

**NARRATOR:** Thompson concluded that the focus of the Maya civilization was time, and that their stelae were built to commemorate its passage. The figures in their art were priests and gods, and their glyphs were symbols recording the mysteries of the heavens.

**MICHAEL COE:** Thompson tries to convince us that there isn't any system here at all, other than the dates and other than the astronomy, that, basically, it's a kind of a mystic exercise on the part of the Maya for getting in touch with their gods.

**NARRATOR:** Most scholars accepted Thompson's theory and presumed that, beyond dates, the glyphs were simply inscrutable.

**MICHAEL COE:** People sort of threw their hands up and said, "Nobody's ever going to crack this script. It's basically too much of a hodgepodge, and it just can't be done."

**NARRATOR:** The woman who would challenge Thompson's vision entered the field of Maya studies by chance. Tatiana Proskouriakoff had studied to be an architect, but when she graduated in 1930, the country was in the grip of the Great Depression.

**MICHAEL COE:** She had no real job ahead of her. She wandered into the museum of the University of Pennsylvania and saw that there was an advertisement for an artist to go and do drawings, or reconstructions, and so forth of the ruins at Piedras Negras, a major, major classic Maya site.

And Tanya began her work there, in the field. And she started to do reconstructions of what it would have looked like in the past.

**NARRATOR:** She was a skilled surveyor and draftswoman. Her reconstruction drawings were so architecturally precise they brought the ancient Maya city to life.
WILLIAM FASH: It's almost as if she had some sort of x-ray vision built into her brain, so that she could look at a ruined temple and guess how many terraces there were supporting the superstructure at the top. And she turned out to be remarkably prescient.

NARRATOR: For nearly 20 years, Proskouriakoff toiled as a lone woman archaeologist in a field dominated by men. She left fieldwork in 1958 to join Harvard's Peabody Museum, spending her time in the basement, where the Maya files were stored.

WILLIAM FASH: One of her projects was to piece back together all the fragments of jade that had been shattered into various bits and pieces. And it was at that point in time, when she was laboring away, almost anonymously, that she came up with her great breakthrough.

NARRATOR: Proskouriakoff had photographs of dozens of stelae at Piedras Negras. When she arranged them by the dedication dates, she began to notice a pattern. The Maya would set up a series of stelae in front of a temple, one every five years. The first stela in each series always showed a figure seated in a carved niche. At the bottom of the stela was a sacrificial victim. A ladder ascended to a seated figure above. Proskouriakoff resolved to make sense of the scene.

Each stela in a series stated the date of its dedication. Several stelae also had another mysterious date. It was followed by a glyph of bird head wrapped in a cloth.

Thompson nicknamed it the "toothache glyph." But what did it mean?

Proskouriakoff found a clue when she discovered another date that fell anywhere from 12 to 31 years before the "toothache" event. The glyph following this earliest date was always the up-ended head of an iguana.

MICHAEL COE: And what she hypothesized was that the first one was a birth glyph and then the next glyph might be this is the date on which he acceded to the throne.

NARRATOR: The dates fit her theory perfectly. The time from the birth of one king to the accession of the next was never more than 60 years, a reasonable human lifetime.

MICHAEL COE: Her hypothesis, then, was that each one of these series were the life story of a particular ruler. It was a dynasty she was dealing with. It was history, for the first time.

NARRATOR: Suddenly, Proskouriakoff's brilliant insight transformed the images on the stelae. The alcoves were thrones. The figures were not gods and priests, as Thompson believed, but kings and queens. This was a family history.

Ruler One ascends the throne in 603. Five years later, he is a warrior, with prisoners at his feet. Fifteen years later, Ruler Two takes the throne. He is 12 years old; his mother stands beside him. At
age 26, he is dressed for battle. Ten years later he is still a warrior, but considerably heavier. He reigns for 47 years.

Proskouriakoff's story followed the reigns of seven kings.

MICHAEL COE: She laid it out, all the dates, with all the sequences for each series. And I looked at it, my knees went weak. I said, "Tanya, you've done it. It's the most important discovery of all time."

PETER MATHEWS (Epigrapher, La Trobe University): She presented the paper to Eric Thompson, and Eric Thompson said, "Oh Tanya, you know that can't possibly be true. There's no history in the inscriptions." And she said that the next morning she came back to work to be greeted by Eric Thompson who said, "You are absolutely right."

MICHAEL COE: Which is amazing for somebody like that who had been a lifelong opponent of the idea that this was history. And that was it. That just changed everything. We now knew that we were dealing with history on these monuments.

NARRATOR: The next advance in breaking the code came in May of 1945, when the Russian Army marched into Berlin. In the ranks was a young officer named Yuri Valentinovich Knorosov.

MICHAEL COE: He told me once that, in the ruins of the national library, he found a book lying there that had survived the fires and all the rest of it, that he picked up, which was a very good black and white reproduction of the three then known codices, the Dresden, the Madrid Codex and the one in Paris.

NARRATOR: Knorosov's fascination with the book grew when he read an article concluding that Maya glyphs were undecipherable. He took it as a challenge and obtained a degree in linguistics to become a lone Russian Mayanist in a field dominated by Eric Thompson.

STEPHEN HOUSTON (Archeologist, Brown University): Because he was behind the Iron Curtain during the Stalinist period, he also was, intrinsically, very isolated. He didn't have a lot of ideas floating around that he had inherited from other people, ideas that, in Thompson's case, were quite simply wrong. It gave him a fresh perspective. He was kind of a clean slate, you might say.

NARRATOR: As a linguist, Knorosov knew the first step in analyzing an unknown writing system is to count the signs. If a script has 20 to 35 signs, it is probably alphabetic, representing simple sounds. If there are 80 to 100 signs, it is probably based on syllables. But if a script has several hundred signs, it is surely logographic, or based on signs for whole words.

A logographic system like Chinese has thousands of signs for thousands of words. The Maya script has about 800 signs, too many to represent an alphabet and far too few to have signs for each word
of a language. So scholars assumed that it was a limited, logographic system, with signs for only a few hundred words.

But Knorosov knew that no writing system consists purely of one kind of sign. Our own alphabet uses numerals and logograms.

Knorosov realized the Maya script was also a mixed system, combining word signs and phonetic signs. With this insight, he turned to the Madrid Codex, where the glyphs for the four directions had been identified.

He focused on the glyph for west, searching for syllables. It was made up of two signs. On the bottom was the sun sign, depicted in all its variations by four spokes or petals. On the top was a hand, with thumb and forefinger touching.

Eric Thompson had argued that the hand sign meant "completion" and read the glyph as "completion of sun," or sunset, therefore, west. For Thompson, glyphs represented ideas not sounds.

DAVID STUART: Eric was kind of bullheaded about things like this. He had determined, to his own satisfaction, that the hieroglyphs were not phonetic and could not be phonetic, and he stuck with that.

NARRATOR: But Knorosov disagreed. He suspected that the glyphs might, in fact, be tied to the sounds of spoken Maya. He knew that in Maya the word for west is chik'in, and the word for sun is k'in. So he suggested that the hand sign should be read, not as the concept, completion, but as the syllable, chi.

When combined with the logogram for sun, it forms chik'in.

To rule out coincidence, Knorosov identified syllables in other glyphs, proving that at least some corresponded to the sounds of spoken Maya.

MICHAEL COE: And, of course, the Soviet propaganda apparatus jumped on this and said, "Look, inspired by the wonders of Marxism-Leninism, this young scholar has done what none of the imperialist scholars in Britain or the United States or Germany could ever do. He's shown how the Maya wrote." And Thompson, a lifelong anti-communist, decided that this was a total fraud and that the world should be straightened out about this.

NARRATOR: Some of Knorosov's specific readings were questionable. Seizing upon them, Thompson discredited his entire method.

Tragically, Knorosov's priceless insights went unrecognized in the West. But the era of lone scholars, scattered across the world, was coming to an end.
The change began in Palenque, driven by Merle Greene Robertson. She had spent years documenting the site's art for future generations. While she was working, an art professor named Linda Schele visited.

LINDA SCHELE: When I walked among Palenque's buildings, I saw a culture where the art was central, and I really was driven to understand who had done it and why and how.

NARRATOR: Schele began to help Robertson. As they worked, she gained an intimate knowledge of the site. It would be put to use in 1973, when Robertson hosted a conference at Palenque.

There, Schele met Peter Mathews who had spent the past winter analyzing books of Palenque's glyphs.

PETER MATHEWS: Basically, by the end of that process, I had three huge notebooks filled up with transcriptions, in Thompson's wretched T-numbers, of all the signs of every single inscription from Palenque.

NARRATOR: Mathews teamed up with Schele to reconstruct Palenque's dynastic history. They knew that some royal names at Palenque are accompanied by a title, a winged-sun sign.

LINDA SCHELE: And so what we did is we went through and found every example of this title and wrote down the nearest date.

NARRATOR: Poring over Palenque's inscriptions, they found over 40 names with the royal title. Each was accompanied by a date and glyph describing the event on that date, for example, a birth shown by the up-ended head of an iguana.

As Schele and Mathews arranged the births, deaths and ceremonies by date, the patterns emerged. One ruler stood out, whom they dubbed "Lord Shield." He was born on the 23rd of March 603. His name glyph featured a warrior's shield. It led them to Palenque's most dominant building, the Temple of the Inscriptions.

The meaning of its hieroglyphic tablets had been an enigma for centuries. Schele and Mathews now saw that the panels were filled with references to "Lord Shield" and key events in his life.

Suddenly, a discovery made in 1948 took on new meaning. A hidden staircase was found in the temple's inner chamber, leading to a crypt with a limestone sarcophagus. Inside was a human skeleton, masked in jade. Schele and Mathews realized that this must be the body of Lord Shield.

For the first time, hieroglyphs were connected to the remains of a Maya ruler. The glyphs, Schele and Mathews grasped, traced the life stories of Lord Shield and five of his successors.
GEORGE STUART: And they came out and literally announced that they had sort of cracked the dynasty of Palenque, and they had names of the rulers and the times when they ruled.

LINDA SCHELE: We had them with funny names like Sun Shield and Lord Toothache.

GILLETT GRIFFIN (Art Historian, Princeton University): At that point, Moises Morales, a local guide, jumped up and said, "Why is it that when important discoveries like this are made, the name was given in English, "Lord Shield," or "Escudo," Spanish?" He said, "These people spoke Maya."

NARRATOR: So they called the king Pakal, a Mayan word, later confirmed, phonetically, to mean shield.

GEORGE STUART: It was just a giddy sort of feeling, and I'll never forget it. It was a real turning point in Maya studies.

NARRATOR: After years of work, the cracking of the Maya code was within reach. But one big hurdle remained: to read the hieroglyphs aloud in the language in which they were written, the phonetic decipherment, begun by Knorosov, had to be completed. Despite decades of effort, fewer than 30 syllabic signs could be read with confidence.

The final key to the sounds of the glyphs would be found by David Stuart, whose education as a Mayanist began at an early age. His father George often brought him along on his field trips to Mesoamerica. One of David's most memorable expeditions was to Coba, in the Yucatan.

DAVID STUART: It was just kind of an incredible place to wander around as a kid. What really got me, though, was, while we were at Coba, there were a couple of monuments that were actually discovered. My dad would drop everything and work on drawing the monument. And I would just sort of look over his shoulder while he was doing that. And I thought, "Gee, this is pretty amazing."

GEORGE STUART: He decided he would go out and draw some himself. So he would take his crayons and paper and everything, and go out, and started drawing hieroglyphs.

DAVID STUART: By the time we got back to the States, my inner soul had been so affected by that experience that I just wanted to keep going back.

NARRATOR: Two years later, George took David to meet Linda Schele.

DAVID STUART: I remember kind of sitting there quietly in the office while she was drawing a glyph, and I don't know why I blurted this out, but I said, "Oh, that's a fire glyph." And so Linda kind of paused, and I remember she sort of looked behind her shoulder and over at me and said, "Yeah, you're right, kid. That's a fire glyph."
LINDA SCHELE: George said that they would really appreciate it if there was ever a chance that David could study with me or something. And so on the spur of the moment, I said, "Why doesn't he come down to Palenque this summer?"

DAVID STUART: And the next summer was one of the most amazing times of my life. She allowed me to help her check her drawings. We were in the temples, with flashlights, with her drawings on clipboards, making corrections. I remember Linda was saying, "Okay, kid, you know, if you want to learn Maya glyphs, you've got to do it on your own."

LINDA SCHELE: I gave him the Tablet of the Cross, told him to go out on the back porch and figure out as much as he could about it. He came back a couple of days later, and had the same amount of structural understanding of the text that had taken me three years to do. And so I figured then that he was really quite good.

NARRATOR: At age 12, David presented his first scholarly paper on Maya hieroglyphs.

KATHRYN JOSERAND (Linguist, Florida State University): And he gives a paper that was certainly beyond the abilities of about two-thirds or three-quarters of the audience to follow. It was a scholarly paper. And mostly people were just amazed.

NARRATOR: Then, after his high school graduation, Stuart received an unexpected call. He had won a MacArthur Fellowship, popularly known as the "genius award." At age 18, he was the youngest recipient ever of the prestigious prize.

Stuart delayed college to work on the glyphs full-time. It was then that he made his great discovery. It came when he focused on a pair of signs already believed to have been deciphered. Eric Thompson had pointed out that one of these signs signaled a count forward to a new date, the other, a count backward to a prior date.

The two glyphs shared a common sign, what Thompson called either a water sign or the head of a shark, or xo'oc in Maya. Xo'oc can also mean "to count."

But Stuart discovered that several other signs also substituted for the shark: a human head, a monkey, and, in one instance, a bracket-shaped sign. Did all these signs stand for the word "count?"

Stuart thought there was a simpler explanation. The bracket symbol was also the phonetic sign for the syllable "u." Suddenly he realized that all these signs simply stood for the syllable u. The proof? Each sign freely substituted for the u bracket in contexts that had nothing to do with counting.

PETER MATHEWS: What Dave Stuart did was show us that many of these substitutions are purely phonetic substitutions that are spelling exactly the same word in slightly different ways.
NARRATOR: The backward and forward counting glyphs were phonetically spelled phrases: i, u, ti and u, ti, ya.

In Maya, i ut means "and then it happened," and ut iy means "since it happened."

The words that Thompson had viewed as mere dates were in fact telling a story.


TRANSLATION VOICE: ...and then it happened, on the day 1 Kib 14 K'ank'in, that she was adorned in marriage, Lady K'atun Ahau, lady of Naman. And after 10 days, 11 months, one year and one score of years, then it happened, on the day 4 Kimi 14 Uo, that their daughter was born, the royal sun lady."

NARRATOR: The implications were revolutionary. Epigraphers had been searching for a single sign for each syllabic sound, but if u was represented by more than one sign, then other syllables might be, as well.

SIMON MARTIN: One of the things about Maya writing which makes it so complicated is their love of substitutions. One sound can have 13, 14, 15 different versions. They hated repeating themselves and loved showing new things. And the recognition of those substitution patterns was what began to break down the complexity of Maya writing into something which was a manageable, comprehensible system.

NARRATOR: Each time a Maya scribe wrote a given word or phrase, he could choose from a variety of signs and combine them in new ways. A sign could be written abstractly, or as the head of a human, animal or god. One sign could be slipped inside another, or partly overlapped. Two signs could join, merging their attributes. Glyphs even included figures of monsters and gods.

LINDA SCHELE: The art of the system is the genius within which they combine these different possibilities. The graphic component of Maya writing is absolutely overwhelming.

DAVID STUART: There was an artistry and a playfulness that was as much a part of the system as the recording of language. So, visually, it was complicated, but once you organized that visual material into the system that existed, it made perfect sense, and you could predict things. You could really crack the code that way.

NARRATOR: An image of the ancient Maya was suddenly coming to life, gleaned from their own words.
Some glyphs simply described personal possessions: u tu pa, "u tup," his ear ornament; u ba ki, "u b'ak," his bone; u la k," his plate; "yuk'ib," his drinking vessel.

STEVE HOUSTON: They're describing particularly important objects belonging to the royal court. They're probably gifts, they're received, they're given, they're part of a social process that helps to bond these societies together.

BARBARA MACLEOD (Linguist and Anthropologist): It's like having a time machine to be able to read these texts. And to me, it's a rare privilege to be able to read them out loud in the language in which they were written. Maybe sometimes I'm the first person to actually say them out loud in a thousand years.

NARRATOR: Soon, more esoteric ideas emerged in the writing. There were glyphs describing frightening otherworldly beings.

DAVID STUART: These glyphs were appearing with scenes of these fantastic animals and creatures and spooky-looking, walking skeletons. And this was a different kind of thing from what we were used to reading about in Maya glyphs. They weren't talking about monuments. They weren't talking warfare. They were talking about, kind of, the inner souls of people.

NARRATOR: As the readings poured out, a more complex view of the Maya began to emerge.

WILLIAM FASH: Instead of these peaceful stargazing astronomer priests, the Maya were shown to be like any other civilization with a great deal of conflict. One of their great claims to fame was how many captives they had taken as offerings to their gods and ancestors. They would also periodically engage in the most precious offering of all, which was in offering their own blood.

NARRATOR: The importance of self-sacrifice can be seen in this ceremony. A royal lady conjures a vision of a serpent with an offering of her own blood. She has perforated her tongue with a stingray spine to draw a rope imbedded with thorns through the incision. In front of her, slips of paper soaked in her own blood burn in a ceramic bowl. Out of the rising smoke forms the vision of a serpent. From its mouth emerges the figure of an ancestor. The upper text describes the ceremony.

TRANSLATION VOICE: On March 28th, 755, a vision was conjured of the serpent Yax Chit Noj Chan, the animal spirit of the god K'awil. And then a vision was conjured of the ancestor, Yax Ts'Aw Heen.

NARRATOR: The glyph for "conjure" shows a hand grasping a fish.

DAVID STUART: It's this idea of grabbing something that's elusive, reaching into another realm, in a way, or even into the underworld, and wrenching something out of that and bringing it into your own world, that is, conjuring.
NARRATOR: From glyphs and art, the psyche of the ancient Maya was emerging.

MICHAEL COE: We now saw the Maya people as a whole. You could look at a piece of Maya art and the inscriptions on the tops of the vases and understand what the heck these people were doing.

NARRATOR: One myth, painted repeatedly on Maya vases, echoes a surviving 16th century manuscript, the Popol Vuh. It tells the saga of twin brothers summoned to the underworld.

MICHAEL COE: They play a ball game against the lords of the underworld in which they are finally defeated, and they are sacrificed. The head of the main brother, there, is cut off and hung up in a tree. And a young lady comes by who is the daughter of one of the lords of the underworld. And she talks to the head and it spits into her hand. Naturally, she becomes pregnant.

NARRATOR: Banished from the underworld, she eventually gives birth to a second set of twins. They become skilled warriors, and return to the underworld to fight its lords. After a series of clever tricks, they resurrect the body of their father, the maize god, and bring food back to their people. Then they rise up to become the sun and moon.

MICHAEL COE: This is the single most important myth that we have from the entire New World, probably the most important piece of literature ever produced in the Western Hemisphere.

NARRATOR: The decipherment was not only illuminating the inner world of the Maya, but also casting new light on the power struggles tearing apart their great city-states. It became clear that from the third to the ninth centuries, the Maya world was dominated by warring superpowers.

MICHAEL COE: We began to see blood everywhere in the iconography and in the hieroglyphs. They were not a peaceful people but involved with absolutely bloody sacrifice.

NARRATOR: In this sculpture, a captive has been scalped, disemboweled and crippled. Wood is tied to his back to set him on fire.

DAVID STUART: There were well-defined groups that were really at each other's throat, battling each other and causing havoc on the landscape.

NARRATOR: The glyphs reveal the mayhem: "chuk," to capture; "jub," to take down a city; "pul," to burn; "chak," to decapitate.

One scribe grimly wrote, "Mountains of skulls were piled up and blood flowed."

On the last dated monument of Copán, the great king Yax Pasaj hands his scepter to his successor, signaling the dawn of a new dynasty. But this new reign never began. The scribe telling its story fled, leaving the monument unfinished.
The kingdom could no longer sustain either rulers or artists. As political upheaval engulfed the region, the great cities of the southern lowlands finally collapsed.

Over 1,000 years later, in the 1980s, Maya villages were again under siege. As civil war ravaged Central America, the Maya made a desperate effort to save their culture.

**LOLMAY GARCÍA MATZAR** (Linguist, Oxlajuuj Keej Maya' Ajtz'iib' Language Center): Many times we identify with the glorious past. We say, "I'm Maya." I see Tikal, Copán, and various monuments, and we identify ourselves as Maya. But many of us don't speak our language now. Every day it is slipping away.

**NARRATOR:** The Maya had guided explorers and rebuilt monuments. They had shared knowledge of their spoken languages and customs. Now they wanted to reap the benefits of the decipherment.

**KATHRYN JOSSERAND:** So at this Mayan workshop in Antigua, I gave a presentation about a hieroglyphic text, and I showed how you could read it.

**NICHOLAS HOPKINS** (Linguist, Florida State University): And the guys came up to her after the paper and said, "You were showing Maya hieroglyphics there on the screen." She said, "Yeah." (They) said, "It looked like you could read those." And she said, "Yeah, we can pretty well read those now." So they said, "Whoa, this is our history." They said, "This is what they've always kept from us. This is what we want to know."

**LOLMAY GARCÍA MATZAR:** This is the history they never taught me in school. It is very important because it is the history I care about.

**NARRATOR:** For centuries, Maya culture has been brutally suppressed. Its people were pressured to speak and write in Spanish and take Christian names. Now the Maya are rediscovering the hieroglyphs and their history.

**LINDA SCHELE:** One of the most precious gifts that any group of humans on the Earth has is history. The process of actually deciphering it, that's only the first tiny step to understanding what this great civilization contributed to the heritage of humanity.

**SIMON MARTIN:** Glyphs represent our one and only window into the pre-Columbian past. It doesn't answer all the questions that we'd love to have answers to, but it does give us an indigenous insight into what they thought was important.

**NARRATOR:** With the cracking of the Maya code, the words of their ancient scribes have finally come to life, revealing a history and literature of a vanished world.
TEST QUESTIONS

1. English belongs to the ____________________________ sub-family of the ____________________________ family.

2. As Stephen Jay Gould explains in the film *With and Without Words*, the fact the evolution has occurred is as well established in science as the fact that ____________________________ ____________________________.

3. Which of the following is a euphemism in contemporary American English: a) drink b) eat c) sleep d) walk [*the correct answer may involve one, some, all, or none of these*]

4. ____________________________ [All or some?] people are capable of style shifting, and ____________________________ [all or some?] people are capable of diglossia.

5. As explained in the film *With and Without Words*, humans have the capacity to understand speech at a rate of up to ____________________________ words per minute.

6. As explained in the film *Cracking the Maya Code*, ____________________________ is the Mayan epigrapher who was awarded a MacArthur Fellowship at the age of 18, becoming the youngest recipient ever of the so-called “genius award.”

7. A(n) ____________________________ is a contemporary language that can be shown to have evolved from an ancestral parent language.

8. As explained in the film *With and Without Words*, ____________________________ [some or all] people gesture when they speak, and when they do gesture, their gestures ____________________________ [are or are not] perfectly synchronized with their speech.

9. The ability to speak two different dialects of the same language is called ____________________________.

10. A(n) ____________________________ is a group of languages that share some common features as a result of having evolved from a common origin.

11. Which of the following is NOT a euphemism in contemporary American English: a) go to the bathroom b) go to bed with someone c) go to hell (as an imperative sentence) d) go to the restroom e) go to your maker [*the correct answer may involve one, some, all, or none of these*]

12. As explained in the film *With and Without Words*, people who gesture extensively when they speak tend to make ____________________________ [more or less?] elaborate sentences, and people who don’t gesture as much when they speak tend to make ____________________________ [more or less?] elaborate sentences.
13. The Indo-European language family has approximately ____________________ languages divided into some ____________________ branches.

14. As Conrad Kottak explains in Cultural Anthropology, Black English Vernacular is a(n) ____________________ of English.

15. In the writing system used in our culture, symbols such as © or @ are called ____________________________________.

16. In contemporary American English, there are a total of __________ non-euphemistic, connotatively-neutral words to refer to the elimination of bodily waste, and a total of __________ non-euphemistic, connotatively-neutral words to refer to sexual activity.

17. A language that has no familial relationship to any known language is called a(n) ____________________.

18. A(n) ____________________ is the original parent language from which daughter languages evolve.

19. The number of language families generally identified by linguists today is approximately ____________________.

20. The form of phonetic writing that uses conventional symbols to represent phones is called ____________________________________ writing.

21. Welsh belongs to the ____________________ sub-family of the ____________________ language family.

22. The language spoken by the people who live in the region of the Pyrenees Mountains in northeastern Spain and southwestern France is an example of a language isolate; the name of that group of people is ____________________________________.

23. The language spoken by the people who live in the region of the Pyrenees Mountains in northeastern Spain and southwestern France is an example of a language isolate; the name of that language is ____________________________________.

24. As explained in the film With and Without Words, humans, like other animals, use an efficient but limited means of communicating some information that’s keyed to particular needs and wants; that method of communication involves the use of ____________________ ________________.

25. As explained in the film Cracking the Maya Code, a system of writing that has 20 to 35 signs is probably a(n) ____________________ system, while a system of writing that has several hundred signs is probably a(n) ____________________ system.
26. As explained in the film With and Without Words, the gesture system is, in effect, __________ [analogical or digital?], and speech is, in effect __________ [analogical or digital?].

27. The number of languages spoken in the world today is approximately _________.

28. ________________ is the protolanguage of Danish, Dutch, English, German, and Swedish.

29. As explained in the film With and Without Words, the single trait that’s most characteristic of humans—the one thing not shared with any other organism—is ________________.

30. In contemporary American English, the terms fuchsia, magenta, and chartreuse are more likely to be used by people who identify with the ___________ gender, while the terms cute, lovely, and divine are more likely to be used by people who identify with the ___________ gender.

31. Italian belongs to the ________________ family.

32. ________________ is the study of language in its social context.

33. As explained in the film Cracking the Maya Code, the Mayan glyph for the word “conjure” depicts ________________, an image that serves as a metaphor for capturing something that is elusive.

34. Which of the following is NOT a euphemism in contemporary American English: a) die b) give up the ghost c) kick the bucket d) pass away [the correct answer may involve one, some, all, or none of these]

35. Indo-European languages are spoken by approximately ________% of the world’s population.

36. As explained in the film With and Without Words, human beings have the capacity to produce a maximum of about ___________ vowels (assuming they hear the sounds in early childhood), but languages tend to focus on a total of ___________ vowels as the most common.

37. As explained in the film Cracking the Maya Code, the term “pakal,” in Mayan, means “______________” in English.

38. As explained in the film With and Without Words, all animals _______________ [do or do not] communicate in some fashion, and all animals _______________ [do or do not] have language.
39. As explained in the film *Cracking the Maya Code*, the Maya system of writing has a total of about ______________________________ signs.

40. As explained in the film *With and Without Words*, human beings can make a total of more than ____________________ facial expressions, and of that number about ____________________ have to do with emotion.

41. As explained in the film *Cracking the Maya Code*, a system of writing that has 80 to 100 signs is probably a(n) ______________________________ system.

42. In American English, gender speech contrasts occur in which of the following areas? (a) profanity, (b) body parts vocabulary (e.g., hand & eye), (c) adjectives such as adorable & divine, (d) body functions vocabulary (e.g., eating & sleeping), (e) color vocabulary, (f) words for fire & water, (g) adjectives such as lovely & charming [*the correct answer may involve one, some, all, or none of these*]

43. As explained in the film *With and Without Words*, language and communication __________________ [are or are not?] the same, and language __________________ [is or is not?] an evolved capacity of the human species.

44. Which of the following is a euphemism in contemporary American English:  a) go to bed with someone  b) have sex with someone  c) make love to someone  d) sleep with someone [*the correct answer may involve one, some, all, or none of these*]

45. As explained in the film *With and Without Words*, sociolinguists who have done research in the U.S. have observed that __________________ [men or women?] are likely to face each other when engaged in conversation, whereas __________________ [men or women?] are likely to stand sideways to each other and face the world when engaged in conversation.

46. Danish belongs to the _________________________________ sub-family of the __________________________________ family.

47. As Conrad Kottak explains in *Cultural Anthropology*, the differences between Black English Vernacular and what is called “standard” American English are __________________________ [phonological, morphological, and/or syntactical?]

48. According to sociolinguists, as described in the film *With and Without Words*, nonverbal elements can account for as much as ______________ percent of what’s being communicated in face-to-face conversations.

49. Spanish belongs to the _________________________________ sub-family of the ________________ family.
50. As explained in the film *With and Without Words*, the ability to combine consonants and vowels into single sounds, which is an important aspect of human language because it enables us to communicate much more rapidly than we could otherwise, is called __________________________. 
Chapter 5

Cultural Universals: Adaptive Strategies

LEARNING OBJECTIVES

At the completion of this unit, you will be able to define what anthropologists mean by the term adaptive strategy, which encompasses a culture’s subsistence strategy as well as its reproductive strategy. You will be able to describe the five different subsistence strategies identified by anthropologists: foraging, pastoralism, horticulture, agriculture, and industrialism. You will also be able to describe the essential elements of a culture’s reproductive strategy. In addition, you will be able to describe the fundamental mechanism of cultural evolution, and you will be able to define such key analytical concepts as carrying capacity, expansion, intensification, and the point of diminishing returns.
LECTURE OUTLINES

I. Adaptive Strategies

the entire set of technologies and practices used to ensure both the long-term and short-term survival of the society; adaptive strategies are composed of subsistence strategies and reproductive strategies

A. Subsistence Strategies

the entire set of technologies and practices used to ensure the short-term survival of the society by securing food and the other necessities for maintaining life (i.e., the techniques for capturing life-sustaining energy)

1. Foraging (a.k.a. hunting & gathering)

a subsistence strategy based on the collection of wild plants and animals that occur naturally in the environment; generally requires a large territory for a small population (i.e., low population density)

2. Pastoralism

a subsistence strategy based on primary reliance upon products derived from herds of domesticated animals, such as sheep, goats, cattle, camels, and reindeer; pastoralism is usually employed in marginal environments, and is always supplemented by trading and/or other subsistence activities

3. Horticulture (a.k.a. shifting cultivation)

a subsistence strategy based on plant cultivation that (1) uses only the energy contained in human muscle power and fire; (2) uses simple technology (such as digging sticks) (3) involves shifting plots of land (4) relies upon the natural replenishment of soil nutrients horticulture is commonly practiced in tropical rainforests, where it is also called slash-and-burn
4. **Agriculture**

a subsistence strategy based on plant cultivation and animal domestication that:
(1) uses animal, wind, & water energy in addition to human & fire energy
(2) uses mechanical technology
(3) involves permanent plots of land
(4) relies on artificial replenishment of soil nutrients via manure fertilizer, irrigation, etc.

agriculture is the world’s dominant subsistence strategy; it can support high population densities.

5. **Industrialism**

a subsistence strategy based on plant cultivation and animal domestication that relies on sophisticated technology to use fossil fuel energy in raising and processing plant and animal domesticates; industrialism utilizes biotechnology that includes chemical fertilizers, pesticides, and herbicides as well as growth hormones and genetic engineering; industrialism is the most productive but also the most costly subsistence strategy.

B. **Reproductive Strategies**

the entire set of technologies and practices used to ensure the long-term survival of the society through the biological replacement of the individual members of society—i.e., technologies and practices that directly or indirectly affect the rate of population growth, either negatively or positively.


1. **Factors Affecting the Birth Rate**

a. **Sexual Prescriptions & Prohibitions**

all cultures attempt to establish regulations governing access to sexual intercourse in an attempt to increase or decrease the likelihood of pregnancy by encouraging or discouraging the link between sexual desire and sexual intercourse.
b. Abortion

the most effective means of severing the link between conception and childbirth by interrupting gestation—but safe, effective, reliable abortion technology is limited to industrial cultures

c. Contraception

the most effective means of severing the link between sexual intercourse and pregnancy—but reliable means of contraception are a recent technological development

2. Factors Affecting Offspring Viability

a. Infanticide (overt & covert)

the deliberate killing of infants, either covertly or overtly, as a means of population regulation—e.g., Tapirape Indians (overt), Medieval Europe (covert)

b. Infant Nutrition & Health Care

directly impacts infant mortality by affecting the infant’s metabolism, resistance to disease, and ability to withstand stress

c. Female Nutrition & Health Care

directly impacts birth rate and infant mortality by affecting the probabilities of ovulation, conception, gestation, childbirth, and lactation

II Cultural Evolution

there are selective pressures that affect the evolution of sociocultural systems just as there are selective pressures that affect the evolution of biological systems

A. The Fundamental Mechanism of Cultural Evolution

all sociocultural systems face the unavoidable biological requirement to adapt to their environments by achieving a balance between their subsistence strategies & their reproductive strategies

the strategies used to achieve that balance place constraints on the other parts of the sociocultural system: particular adaptive strategies give rise to particular forms of kinship, political organization, and religion & art
B. Key Analytical Concepts

1. Carrying Capacity

the maximum population that can be supported by a given subsistence strategy in a given environment

2. Expansion

a technique for increasing the total amount produced with a given subsistence strategy by increasing the size of the environment being exploited (i.e., exploiting previously unexploited resources); limited by the availability of unexploited territory

3. Intensification

a technique for increasing the total amount produced with a given subsistence strategy by increasing the total amount of work (i.e., the number of hours worked per person or the total number of people working); limited by the ultimate certainty of environmental degradation

4. The Point of Diminishing Returns

if intensification continues indefinitely, it inevitably reaches the point of diminishing returns—i.e., the point at which the amount produced begins to decline per unit of work

The following additional lecture notes are intended especially for internet students (although they may also be helpful to classroom students who were absent from the lecture presentation).

All of the important concepts from this unit can easily be gleaned from the Lecture Outlines and from the assigned chapter in Conrad Kottak’s *Cultural Anthropology*. Kottak doesn’t use precisely the same terminology (i.e., he doesn’t explicitly refer to an “adaptive strategy” divided into two parts, a “subsistence strategy” and a “reproductive strategy”), but he does discuss most of these elements. When it comes to the different types of subsistence strategies, Kottak focuses his attention on the first four (*foraging, pastoralism, horticulture,* and *agriculture*)—for the definition of *industrialism*, you should refer to the Lecture Outlines in the preceding pages.
Notice that there’s an important distinction in the ways that subsistence strategies and reproductive strategies are described in the Lecture Outlines. A typology of subsistence strategies is presented—in other words, there are five types of subsistence strategies, and every culture in the world uses one of those five types (a small number of cultures use a combination of two or more types). In contrast, there isn’t a typology of reproductive strategies—instead, there are factors affecting the birthrate and factors affecting offspring viability in all cultures, but any particular culture may or may not have contraception, abortion, sexual prescriptions, infanticide, high quality infant health care, high quality female nutrition, etc. Any culture’s reproductive strategy is thus a combination of many factors, which means that each individual culture’s overall reproductive strategy is potentially unique.

The distinction between overt and covert infanticide is simple: in societies that practice overt infanticide, the practice is out in the open, acknowledged and talked about, and accepted as part of the moral fabric of the society. Among the Tapirapé Indians of Brazil, for example, there was a cultural rule which specified that the fourth child born to any woman must be killed at birth (by being immediately buried in the garden), and any woman who failed to obey that rule would be seen as committing an immoral act. (Lacking any reliable technology of contraception or abortion, the Tapirapé would have risked starvation by exceeding the carrying capacity of their subsistence strategy if they hadn’t practiced infanticide.) Similar problems faced many poor people in medieval Europe, who also practiced infanticide, but infanticide in medieval Europe was generally covert—people didn’t talk about and didn’t admit that that was what they were doing. Covert infanticide frequently took the form of “overlaying,” where the mother would “accidentally” roll on top of her child while sleeping and smother the infant; such “accidents” most often happened with later children, such as the fourth or fifth child--children that the family couldn’t afford to feed, clothe, and house.

Finally, it may seem strange that the elements listed under “Reproductive Strategies” include female nutrition and health care but not male nutrition and health care—after all, male sperm are just as essential to human reproduction as female eggs. As I explain in the classroom, however, females are the limiting resource when it comes to human reproduction; males, in one important sense, are far less significant. One fertile male could reproduce several hundred offspring per year, but one fertile female can only reproduce one offspring per year (or perhaps two or three, in the unlikely event that she has twins or triplets). Thus any society’s capacity for reproducing offspring depends on the number of healthy, fertile women it has—and the health and fertility of women depends directly on the kind of nutrition and health care that they receive.
FILM SYNOPSIS

Baka: People of the Forest

The first of the two films that accompany this unit is a National Geographic Society production entitled Baka: People of the Forest.

Baka: People of the Forest takes an ethnographic perspective, focusing on a single society in central Africa. The film is characterized by extraordinary production values—the cinematography and sound recording are comparable to the finest Hollywood films, and both were accomplished under exceptionally difficult conditions. The film does an outstanding job of humanizing the Baka. Despite the fact that the Baka have a culture that is very different from our own, it is clear from the film that all of us share a common humanity. After watching the film, you should be able to answer the following questions: Who are the Baka? Where do they live? How does the film illustrate the concepts of cultural relativism and ethnocentrism? What components of the universal pattern are portrayed in the film for the Baka culture? What are the similarities and differences between the Baka way of life and your own? What challenges do the Baka face to the continued existence of their culture?

The people who are known to much of the outside world as the Pygmies of the African rainforest don’t call themselves pygmies; rather they call themselves the Baka. Their lack of height is really not apparent in this film, but their intimate knowledge of the forest is. We see a man with only a machete and a thick vine climb 120 feet to get honey from a bees’ nest in the forest canopy, lowering the honeycomb using a basket woven of fronds (and using a bundle of smoking leaves to make the bees lethargic and prevent them from stinging him). The women collect fruit, medicines and dam rivers to find fish, and help build transient, sturdy shelters of branches and leaves.
Sitting around the fire at night, the Baka sing stories call-and-response style under the full moon (including a story one man tells about a chimpanzee that abducted a human child and was condemned by the gods to live forever in the forest without being able to speak). We see a father teach his son the names for different kinds of termites, and the patient interaction between a loving parent and child looks intensely familiar (the lesson occurs while the father and son are fishing the termites out of their nest and eating them, which the narrator tells us taste like raw egg).

A man and his wife await the birth of their child in a simple thatch hut, and we observe simple rituals of rubbing herbal medicine on the wife’s stomach. “Mama is going to give us a baby tonight,” says the husband to their son, and we observe a tiny bundle on the floor of the hut the next day, and the grudging but touching acceptance of her younger brother, Ali (who at first is very jealous of the attention paid to his new sister, and pouts and whines in an attempt to get his parents to focus their attention on him).

The Baka live in the west African country of Cameroon, located on the coast of the Atlantic Ocean between Nigeria and Equatorial Guinea. Despite the remote location and difficult conditions, the filmmakers were able to produce a documentary of extraordinarily high quality. In an especially striking scene that is beautifully filmed and staged, we see a husband and wife in bed at night in their dome-shaped hut made of saplings and leaves (see the photo above). There is a fierce thunderstorm crashing outside, and rainwater begins to drip down through the leaves onto the couple below.

“The roof is leaking,” the husband complains to his wife. “Get up and fix it.”

“You fix it,” she replies. “It’s on your side.”

The film offers a somewhat romantic view of the Baka, seeming to suggest that they live in a world of peace and harmony where there are few dangers or discomforts (the narrator does tell us that the Baka are afraid of some animals in the forest, most especially the gorilla, but we see nothing to suggest that their fears are justified). There is a darker side of life for the Baka—their way of life is severely threatened at the moment—but the film does a wonderful job of portraying the sunnier aspects of their existence.
FILM SYNOPSIS

The Hunters

The second of the two films that accompany this unit is a classic ethnography depicting a foraging society entitled *The Hunters*.

*The Hunters* is an authentic depiction of the way of life of the !Kung San, an indigenous African society that pursued a hunting-and-gathering subsistence strategy in the Kalahari Desert until the decade of the 1970’s. Because the life style of the !Kung San has virtually disappeared from the world since the film was made, *The Hunters* is a remarkable document that can never be re-created. After watching the film, you should be able to answer the following questions: Where exactly did the !Kung San live? How did they produce their food? What plant and animal resources were important to them? What kind of technology did they have? What kind of division of labor did they have? How was food distributed among the members of the society?

A !Kung San Hunter
This re-release of an early classic in anthropological film follows the hunt of a giraffe by four men over a five-day period. The film was shot in 1952-53 on the third joint Smithsonian-Harvard Peabody sponsored Marshall family expedition to Africa to study Ju/'hoansi, one of the few surviving groups that lived by hunting & gathering. John Marshall was a young man when he made this, his first feature length film. He was a natural cameraman who found a subject that would dominate the rest of his life. He has since shot over 600,000 feet of film from which 24 films were edited. The value of the footage as an encyclopedia of !Kung life is unequaled by any other body of ethnographic film.

The film focuses very dramatically on the role that hunting plays in the life of the !Kung San. Hunting is an activity pursued primarily by men, and early in the film we see several scenes where young boys are beginning to acquire the hunting skills they’ll need as adults. One young boy, for example, sets a snare for a bird and catches a mongoose instead; another group of young boys use tiny bows-and-arrows to practice shooting miniature darts into a beetle. We also see the men preparing to go hunting by smearing poison on the tips of their arrows (poison that they make ingeniously from the grubs [i.e., larvae] of a beetle), and provisioning themselves with water that they carry in ostrich shells that have had a hole punched in them.

The heart of the film focuses on a hunt that lasts several days. We follow a hunting party of four men as they set off into the vast uninhabited expanse of the Kalahari Desert (located in the northern portion of Botswana). They’re not hunting for any particular animal, but instead searching for tracks, and looking for any promising opportunity. Along the shore of a lake, one man finds several bird’s nests within easy reach in a shrub; he collects the tiny baby birds he finds inside to take home to make a broth for his baby daughter. We watch as the hunters seize opportunities to pursue various prey that they come across. Early in the hunt, the men surprise a pair of porcupines asleep in the grass—they kill both animals with their sticks and cook and eat them on the spot. Later, they manage to shoot a poisoned arrow into a kudu (a large species of antelope), but by the time they find the dead animal it’s already been largely consumed by various predators and scavengers (especially jackals and hyenas).

In the most dramatic sequence in the film, the men shoot poisoned arrows into the haunch of a female giraffe, and then track her for several days as she slowly weakens. They eventually corner the animal when she’s no longer able to run, but she’s still capable of kicking, and her powerful legs and razor-sharp hooves make her very dangerous. The men are able to kill her with their spears, however, and they begin to butcher her immediately and to cook and eat some of the meat. Working through the night, they butcher the entire giraffe, and hang the meat on branches to dry in the rising sun. They use virtually all of the animal, except for the heavy hooves; the skin is too thick and too tough to use for clothing or even shoes, so they set it aside to use for food. One of the men returns to the camp to get others to help carry the meat home, while the remaining men protect their kill from scavenging animals. When they finally return to camp with the meat at the end of the film, each hunter divides his share of the kill among his kinsmen, who in turn share the meat with their kinsmen, until everyone in the camp receives a share.
The Scientific Approach and Cultural Materialism

James Lett

Excerpted from


This selection is excerpted from Chapter 4 of my book on anthropological theory. It critiques the theoretical perspective (or “paradigm”) known as *cultural materialism*, which is responsible for identifying the three-part *universal pattern* consisting of the *infrastructure*, *structure*, and *superstructure*. In particular, this selection explains that the principle of *infrastructural determinism* is incomplete in its present formulation.

...It should be remembered...that science is not a royal road to truth, and even the consistent application of the scientific method cannot guarantee the production of full and certain knowledge. (Science, as we have seen, claims pro- visional certainty rather than absolute certainty.) As a result, even those anthropological paradigms that do adhere consistently to the principles of scientific inquiry cannot always claim complete success in the pursuit of precise and reliable knowledge.

The paradigm of cultural materialism provides an instructive example. Although most commonly associated with Marvin Harris (1979), the paradigm’s principal architect, cultural materialism is championed by many other anthropologists as well (see Murphy and Margolis 1995). Cultural materialism is a research strategy that seeks to explain the causes of the similarities and differences among the world’s cultures. The goals and methods of cultural materialism have always been explicitly and thoroughly scientific (Harris 1968; 1979; 1996). According to the theoretical principles of cultural materialism, there is a universal pattern of sociocultural systems which consists of three components: *infrastructure*, *structure*, and *superstructure*.

The infrastructure is, in essence, the culture’s technology of subsistence and reproduction; it “constitutes the interface between nature in the form of unalterable physical, chemical, biological, and psychological constraints on the one hand, and culture which is *Homo sapiens’s* primary means of optimizing health and well-being, on the
other (Harris 1994:68). The structure is the basic social organization of the culture; it consists of the ways the society is organized to produce, distribute, and consume goods and services at both the domestic and political levels. The superstructure comprises the set of values and beliefs that add meaning to life by providing emotional, intellectual, and aesthetic satisfactions.

The fundamental theoretical principle of cultural materialism is the principle of infrastructural determinism, which holds that particular forms of infrastructure give rise to particular forms of structure, which in turn give rise to particular forms of superstructure. As Murphy and Margolis (1995:2) explain, however, the principle of infrastructural determinism is neither rigid nor simplistic:

The cultural materialist model of society asserts that all three levels [infrastructure, structure, and superstructure] are in a continuous dynamic state and that there are significant and predictable relationships between them. The model suggests that changes in a society’s infrastructure are primarily the result of changes in a human population’s relationship to its environment. Moreover, cultural materialism holds that, over time, changes in a society’s material base will lead to functionally compatible changes in its social and political institutions (structure) and in its secular and religious ideology (superstructure).

This assertion seems plausible on the surface; no sociocultural system of any sort could exist without living human beings, so the infrastructure, which is the means by which human beings ensure their survival, must come first in some important sense. In fact, cultural materialists have marshaled considerable evidence to substantiate the primacy of the infrastructure (see Harris 1979). Monotheistic religions, for example, are found only in societies with a state level of political economy, and states are found only in societies with agricultural or industrial-agricultural modes of production. The principle of infra-structural determinism appears to be true in broad outline, but that is precisely the problem with it: at its present stage of development, it can only tell us what is generally true, not what is specifically true. This limitation is one that cultural materialists like Murphy and Margolis (1995:3) recognize and admit:

[Cultural materialism] never suggests that all changes in the system under all circumstances spring from alterations in the infrastructure. Nor does cultural materialism claim that the structure and superstructure are passive entities that do not influence the material base. Rather it proposes a probabilistic relationship between these three levels, while at the same time insisting that the principal forces of change reside in the material conditions of human existence.
Thus, when we note changes in a society’s structure or superstructure, we must first look to its infrastructure for our explanations because, according to cultural materialism, that is the most probable source of change.

One final caveat is in order. While cultural materialism looks to the productive and reproductive modes of society in order to account for its structural and ideological components, there may be a time lag before ideologies or social institutions evolve that are compatible with changed material conditions.

This statement is unarguable, as anyone familiar with cultural processes can attest, but in one important sense it is also unsatisfying, because it lacks the degree of specificity that we have come to expect from scientific knowledge. Precisely which changes under precisely what circumstances spring from alterations in the infrastructure, and which stem from the structure and superstructure? If the relationships between the three levels are probabilistic, exactly what are the probabilities? What determines whether there will or will not be a time lag between an infrastructural change and a structural or superstructural accommodation? How long will the time lag be? If the length of time varies (as it apparently does), what factors account for the variability?

The crucial lack of specificity in the theoretical principles of cultural materialism is particularly apparent when compared to the theoretical principles of the natural sciences. In physics, for example, the theoretical principles of aerodynamics are understood with great specificity: it is possible to determine the airworthiness and performance characteristics of a new aircraft design, even before the prototype is constructed, simply by applying the principles of aerodynamics in computer simulations. When and if cultural materialists achieve a comparable level of knowledge, they will be able to predict, with equal precision, the response of any particular sociocultural system to any hypothetical set of circumstances. At present, however, cultural materialism is incapable of generating such precise predictions.

Indeed, the anthropologist Tim O’Meara argues that the theoretical principles of cultural materialism necessarily limit the paradigm’s ability to predict and explain human behavior. According to O’Meara (1997), cultural materialism is founded upon a fundamental logical error; the paradigm postulates that the “infrastructure” has causal power to shape the other elements of sociocultural systems, yet the “infrastructure” is simply an abstraction, a statistical generalization derived from recurrent patterns of behavior. Since the “infrastructure” is not an empirical entity with a tangible existence of its own, it cannot have any causal efficacy in the real world. While there are undeniable correlations between the patterns of behavior labeled as “infrastructure” and those labeled as “structure” or “superstructure,” such “patterns of behavioral events,” according to O’Meara (1997:406), “are not causal...
laws,” but are instead simply “signposts pointing toward the causal properties of the behaving entities.” O’Meara explains:

Correlations among event types may help us predict future event types with some accuracy, but only if relevant conditions remain similar. Because of the vast number, specificity, and delicacy of psychological and other constituent mechanisms of humans, however, the corresponding number, specificity, and delicacy of relevant conditions is also vast. Only by learning the causal-mechanical properties of those mechanisms and the environmental conditions to which they are sensitive can we explain people’s behavior in current circumstances or predict them in novel circumstances. (O’Meara 1997:406)

O’Meara’s argument is subtle and complex, and it appears likely to engender considerable debate within anthropology. As of this writing, that debate has just begun (see Harris 1997b), and the eventual outcome is not at all clear. What does seem clear is that the principle of infrastructural determinism is imprecise and incomplete at best. It should be quickly noted, however, that cultural materialists are very aware of this fact. Commenting on the demise of communism in the former Soviet Union, for example, Marvin Harris (1992:300) admits that the long time lag between the Bolshevik Revolution in 1917 and the fall of communism in 1991 poses a problem for cultural materialism: “the evidence for concluding that the Soviet bloc’s collapse is an example of the primacy of the infrastructure is not as clear cut as I would like it to be.”

Moreover, cultural materialists can hardly be faulted for having failed to produce a complete explanation of cultural causality, however. They are the ones, after all, who first defined such a goal, and they are the ones who admit that there is still work to do. Moreover, they are the ones who have consistently argued for a scientific approach to anthropological knowledge, and they are the ones who have invariably stated their arguments in clear, straightforward language. Cultural materialism is not the only scientific paradigm in anthropology, of course, and it is an open question whether it will be the dominant scientific paradigm in the future of the discipline. Whether the principle of infrastructural determinism is refined to become a theory of great precision, or whether it ultimately becomes a footnote in the history of anthropology, cultural materialists will still be able to claim a major contribution to the discipline: they demonstrated a commitment to the principles of rational inquiry at a time when many of their colleagues were advocating the abandonment of reason.
TEST QUESTIONS

1. ____________________________________________ is the subsistence strategy based on plant cultivation that employs simple technology and relies upon the natural replenishment of soil nutrients.

2. ____________________________________________ is an important factor affecting the birth rate because it is the most effective means of severing the link between sexual intercourse and pregnancy.

3. As depicted in the film *The Hunters*, which of the following technologies do the !Kung San use in hunting? (a) traps and snares, (b) sticks, (c) blowguns, (d) bows and arrows, (e) spears. [The answer could be some, all, or none of these.]

4. All sociocultural systems face an unavoidable biological requirement to adapt to their environments by achieving a balance between their ________________________________ and their ________________________________.

5. The Tapirapé custom of killing every fourth child born to any woman by burying the newborn in the garden is an example of ________________________________.

6. ____________________________________________ is the subsistence strategy based on plant cultivation and animal domestication that uses animal, wind, and water energy in addition to the energy contained in fire and human muscle power.

7. The !Kung San live in the ________________________________ Desert in the northern part of the country of ________________________________.

8. ____________________________________________ is the subsistence strategy that employs biotechnology which includes chemical fertilizers, pesticides, and herbicides as well as growth hormones and genetic engineering.

9. ____________________________________________ is a technique for increasing the total amount produced by a given subsistence strategy by increasing the number of hours worked per person or the number of people working.

10. At conclusion of the film *The Hunters*, ____________% of the relatives of the successful hunters receive a share of giraffe meat, and ____________% of the remaining people in camp receive a share.

11. ____________________________________________ is defined as the moment in time when the amount produced begins to decline per unit of effort.
12. As described in the film *Baka: People of the Forest*, the Baka live in a tropical rainforest in the country of ____________________________.

13. ____________________________ is the subsistence strategy also known as “hunting and gathering.”

14. When the men butcher the giraffe in the film *The Hunters*, they set the giraffe’s skin aside to be used later for ____________________________.

15. ____________________________ is a technique for increasing the total amount produced by a given subsistence strategy that is limited in its application by the availability of unexploited territory.

16. As explained in the article *The Scientific Approach and Cultural Materialism*, the fundamental theoretical principle of the paradigm of cultural materialism is the principle of ____________________________.

17. ____________________________ is an important factor affecting offspring viability because it directly impacts the birth rate and infant mortality rate by affecting the probabilities of ovulation, conception, gestation, childbirth, and lactation.

18. The ____________________________ of a sociocultural system is the entire set of technologies and practices that directly or indirectly affect the rate of population growth, either positively or negatively.

19. As depicted in the film *Baka: People of the Forest*, the man who climbs the giant tree to retrieve the honey combs uses a(n) ____________________________ to stun the bees and prevent them from stinging him.

20. ____________________________ is the subsistence strategy based on plant cultivation that uses only the energy contained in human muscle power and fire.

21. In the film *The Hunters*, a young boy who is learning to be a hunter catches a(n) ____________________________ in a snare he had set for a bird.

22. ____________________________ is the subsistence strategy that is usually employed in marginal environments and that is always supplemented by trading and/or other subsistence activities.

23. In the film *Baka: People of the Forest*, a father is shown teaching his young son the names of a particular kind of insect. Name that insect: ____________________________.

24. Before the men encounter the herd of giraffes in the film *The Hunters*, they fatally wound a(n) ____________________________, but by the time they find the carcass in the morning it had been almost completely eaten by jackals and hyenas.
25. The ______________ of a sociocultural system is the entire set of technologies and practices used to ensure both the short-term and long-term survival of the society.

26. ______________ are cultural factors affecting the birth rate that seek to increase or decrease the likelihood of pregnancy by encouraging or discouraging the link between sexual desire and sexual intercourse.

27. As depicted in the film The Hunters, the !Kung San make ingenious use of ______________ as portable drinking vessels.

28. ______________ is an important factor affecting offspring viability because it directly impacts the infant mortality rate by affecting the infant’s metabolism, resistance to disease, and ability to withstand stress.

29. As depicted in the film Baka: People of the Forest, the conversation the husband and wife have in bed at night during the thunderstorm is very ______________ [similar to or different from?] a conversation an American couple might have in parallel circumstances, and the young boy’s reaction to the birth of his sister is very ______________ [similar to or different from?] the reaction an American child might have in a parallel situation.

30. ______________ is a technique for increasing the total amount produced by a given subsistence strategy that is limited in its application by the ultimate certainty of environmental degradation.

31. ______________ is the subsistence strategy also known as “shifting cultivation.”

32. Early in the film The Hunters, one of the men collects ______________ that he will use to make soup for his infant child.

33. As depicted in the film Baka: People of the Forest, a father entertains his family around the campfire at night by telling a story about a(n) ______________ that carried off a human child and was punished by the gods for its crime.

34. ______________ is a technique for increasing the total amount produced by a given subsistence strategy by exploiting previously unexploited resources.

35. The ______________ of a sociocultural system is the entire set of technologies and practices used to ensure the short-term survival of the society by securing food and other necessities for maintaining life.

36. The ______________ is the maximum population that can be supported by a given subsistence strategy in a given environment.
37. Before the men encounter the herd of giraffes in the film *The Hunters*, they kill and eat a pair of ________________________________.

38. ________________________________ is the subsistence strategy based on the collection of wild plants and animals that occur naturally in the environment.

39. As explained in the article *The Scientific Approach and Cultural Materialism*, the anthropological paradigm of cultural materialism identifies three components to the universal pattern of sociocultural systems; the component that consists of the culture’s technology of subsistence and reproduction is called the ________________________________.

40. ________________________________ is the subsistence strategy that generally involves slash-and-burn techniques when used in tropical rainforests.

41. ________________________________ is the subsistence strategy based on plant cultivation and animal domestication that uses permanent plots of land and relies upon the artificial replenishment of soil nutrients; it is the most widely used subsistence strategy in the world today.

42. In the film *Baka: People of the Forest*, the narrator tells us that the insects we see the Baka eating taste like ________________________________.

43. ________________________________ is an important factor affecting the birth rate because it is the most effective means of severing the link between conception and childbirth.

44. Early in the film *The Hunters*, some young boys are shown shooting several arrows into a(n) ________________________________ in an activity that foreshadows their future role as men & hunters.

45. Selective pressures affect (a) both sociocultural systems and biological species; (b) neither sociocultural systems nor biological species; (c) sociocultural systems only; (d) biological species only.

46. As mentioned in the film *Baka: People of the Forest*, the animal in the forest that the Baka fear most is the ________________________________.

47. ________________________________ is the subsistence strategy based on plant cultivation and animal domestication that relies on sophisticated technology to use fossil fuel energy in raising and processing plant and animal domesticates.

48. The widespread phenomenon of “overlaying” in Medieval Europe is an example of ________________________________.
49. __________________________ is the subsistence strategy based on primary reliance upon products derived from herds of domesticated animals, such as sheep, goats, camels, cattle, and reindeer.

50. As depicted in the film *The Hunters*, the !Kung San use poison made from __________________________ to smear on the tips of the arrows.
Chapter 6

Cultural Universals:
Kinship

LEARNING OBJECTIVES

At the completion of this unit, you will be able to define and describe monogamy, polygyny, and polyandry as the three main types of marriage, and you will be able to define patrilocality, matrilocality, and neolocality as the three types of postmarital residence rules. You will also be able to describe the differences between endogamy and exogamy, as well as the differences between the nuclear family and the matrifocal family. In addition, you will be able to define the affinal and consanguineal principles of kinship, and you will be able to describe the differences between bilateral, patrilineal, and matrilineal descent systems. Finally, you will be able to describe the basic logic of the six types of terminological systems, and in so doing you will be able to distinguish between cross cousins and parallel cousins.
LECTURE OUTLINES

I. Marriage

a culturally-recognized union between two or more people which grants rights of sexual access and parenthood to the spouses (marital partners)

A. Types of Marriage

1. Monogamy

a marriage consisting of one wife and one husband; monogamy is the most commonly practiced form of marriage in the world

2. Polygamy

a marriage consisting of three or more spouses; the term “polygamy” does not specify the sex of the spouses involved

a. Polygyny

the form of polygamous marriage consisting of one husband and two or more wives; polygyny is the most widely accepted ideal form of marriage among the world’s cultures

b. Polyandry

the form of polygamous marriage consisting of one wife and two or more husbands; where practiced, polyandry is usually fraternal polyandry; it is the most rarely accepted and most rarely practiced form of marriage in the world
B. Post-Marital Residence Rules

cultural customs and traditions that specify where the spouses should live once they get married

1. Patrilocality (Virilocality)

   the rule that requires marital partners to live in the vicinity of the husband’s relatives (associated with pastoral, horticultural, and agricultural societies)

2. Matrilocality (Uxorilocality)

   the rule that requires marital partners to live in the vicinity of the wife’s relatives (associated with pastoral, horticultural, and agricultural societies)

3. Neolocality

   the rule that requires marital partners to establish an independent residence apart from either the husband’s or wife’s relatives (associated with foraging and industrial societies)

C. Spouse Selection Rules

cultural customs and traditions that specify whom one can and cannot choose as a marital partner

1. Endogamy

   the spouse selection rule that requires individuals to marry inside their own culturally-defined group (i.e., the spouse selection rule that prohibits individuals from marrying outside their own culturally-defined group)

2. Exogamy

   the spouse selection rule that requires individuals to marry outside their own culturally-defined group (i.e., the spouse selection rule that prohibits individuals from marrying inside their own culturally-defined group)

   U.S. culture practices both endogamy (e.g., race, religion, nationality, class, & generation) and exogamy (e.g., family)
II. Family

a culturally-defined group of people who are related to each other by either *affinal* or *consanguineal* ties (there are many types of families defined by different cultures, and all cultural definitions are fictions—all people are related by affinal and consanguineal ties)

**affinal relatives (affines):** people related to each other by marriage (i.e., spouses and in-laws)

**consanguineal relatives (consanguines):** people related to each other by biological descent (i.e., parents & children, etc.)

A. Nuclear Family

a family consisting of a married couple and their children who live with them (the nuclear family is very widespread, but it is not universal as a form of household organization)

1. **Family of Orientation**

   nuclear family consisting of an individual and his or her parents and siblings

2. **Family of Procreation**

   nuclear family consisting of an individual and his or her spouse and children

B. Matrifocal Family

a “mother-centered” or female-headed household consisting of a woman and her children who live together in a household apart from the woman’s sexual partner(s) and/or the children’s father(s)

in a matrifocal family, the woman’s sexual partner(s) and/or children’s father(s) may maintain sexual and parental relationships with the appropriate members of the household; the matrifocal family is a relatively rare form of household, but it is found in several cultures, including some in the West Indies
III. Descent Systems

culturally-specific systems for tracing an individual’s line of biological ancestry (i.e., consanguineal kin)

A. Bilateral

system that traces biological descent through both the mother’s and father’s side of the family through both male and female lines

B. Unilineal

systems that trace biological descent through either the mother’s or father’s side of the family through either the male or female line only

1. Patrilineal (Agnatic)

system that traces biological descent through the father’s side of the family through the male line only

2. Matrilineal (Uterine)

system that traces biological descent through the mother’s side of the family through the female line only

IV. Terminological Systems

culturally-specific systems for specifying terms to designate each kind of culturally-recognized relative; terminological systems have their own consistent internal logic; all six terminological systems assign the same terms to the nuclear family (i.e., father, mother, brother, sister, husband, wife, son, daughter)
parallel cousin: the offspring of an individual’s parent’s sibling that is related to the individual through siblings of the same sex on the parent’s generation

cross cousin: the offspring of an individual’s parent’s sibling that is related to the individual through siblings of the opposite sex on the parent’s generation

A. Bilateral Terminological Systems

1. Hawaiian

extends nuclear family terms outside the nuclear family on a generational basis

2. Sudanese

assigns a unique descriptive term for each relative outside the nuclear family, specifying that relative’s link to “ego” (i.e., the relevant individual)

3. Eskimo

restricts nuclear family terms to the nuclear family, but lumps both affinal and consanguineal kin outside the nuclear family on a generational basis

B. Unilineal Terminological Systems

1. Iroquois

comes in either agnatic or uterine varieties, and calls cross cousins “cousin” and parallel cousins “brother” and “sister”

2. Crow

invariably matrilineal, calls parallel cousins “brother” and “sister” and calls cross cousins by a term that mixes generations (e.g., mother’s brother)

3. Omaha

invariably patrilineal, calls parallel cousins “brother” and “sister” and calls cross cousins by a term that mixes generations (e.g., father’s sister)
The following additional lecture notes are intended especially for internet students (although they may also be helpful to classroom students who were absent from the lecture presentation).

Virtually all of the material covered in the preceding Lecture Outlines is discussed in complete detail in the assigned chapters of Conrad Kottak’s Cultural Anthropology. The one exception is that Kottak doesn’t use the terms Hawaiian, Sudanese, Eskimo, Iroquois, Crow, or Omaha to identify the six terminological systems used by cultures around the world. I believe Kottak’s discussion of terminological systems is a little too technical for an introductory course, and I think you’ll find the following descriptions to be much simpler and easier to remember.

Traditionally, anthropologists have named the six different types of terminological systems found among the world’s cultures after particular cultural groups. Thus, for example, the Iroquois culture—a Native American society that was indigenous to what is today New York state—used a terminological system that also happens to be used by many other cultures around the world. The Iroquois didn’t invent the Iroquois terminological system—many other cultures developed the same system independently—but the Iroquois just happen to be a convenient example known to anthropologists, so ethnologists apply the term Iroquois to any culture that uses the same logical system for assigning kin terms to relatives. Every culture in the world uses one of the six terminological systems identified by anthropologists, and that includes the United States.

**Hawaiian:** A terminological system used exclusively with bilateral descent, it extends nuclear family terms (e.g., mother, father, brother, sister, husband, wife, son, & daughter) outside the nuclear family on a generational basis. In other words, all consanguineal relatives (i.e., relatives by descent, as opposed to affinal relatives, which are relatives by marriage) on one’s own generation, both inside and outside one’s own nuclear family, are called brother & sister; all consanguineal relatives on the generation above, both inside and outside one’s own nuclear family, are called mother & father; and all consanguineal relatives on the generation below, both inside and outside one’s own nuclear family, are called son & daughter. (Kottak describes the Hawaiian terminological system as “generational” kinship terminology.)

**Sudanese:** A terminological system used exclusively with bilateral descent, it assigns a unique descriptive term for every relative on the kinship chart. Thus, in addition to the nuclear family terms of mother, father, brother, sister, husband, wife, son, & daughter that are applied to relatives in the nuclear families of orientation and procreation, there is a term for mother’s sister, another (different) term for mother’s brother, yet another for brother’s daughter, still another for sister’s daughter, and so on for every relative on the chart. (Kottak describes the Sudanese terminological system as “bifurcate collateral” kinship terminology.)

**Eskimo:** A terminological system used exclusively with bilateral descent, it restricts nuclear family terms to the nuclear family (in other words, no one outside the nuclear families of orientation and procreation is called mother, father, brother, sister, husband, wife, son, or daughter), but outside the nuclear family it lumps all relatives together on a generational basis. Thus all consanguineal relatives on one’s own generation, other than those inside one’s own nuclear family, are called cousin; all affinal and consanguineal relatives on the generation above, other than those
inside one’s own nuclear family, are called aunt & uncle; and all close consanguineal relatives on the generation below, other than those inside one’s own nuclear family, are called nephew & niece. (Kottak describes the Eskimo terminological system as “lineal” kinship terminology.)

**Iroquois:** A terminological system used exclusively with unilineal descent, it can be found in both patrilineal and matrilineal varieties. Like all six of the terminological systems, it uses the terms mother, father, brother, sister, husband, wife, son, or daughter to refer to members of the nuclear families of orientation and procreation, but it also uses the terms brother & sister to refer to parallel cousins, and the term cousin to refer to cross cousins. (Kottak describes the Iroquois terminological system as “bifurcate merging” kinship terminology.)

**Crow:** A terminological system used exclusively with matrilineal descent, it uses the terms brother & sister to refer to parallel cousins, but it refers to cross cousins by terms that mix generational labels, such as mother’s brother (“mother” comes from the generation above, “brother” from ego’s generation). (Kottak describes the Crow terminological system as “bifurcate merging” kinship terminology.)

**Omaha:** A terminological system used exclusively with patrilineal descent, it uses the terms brother & sister to refer to parallel cousins, but it refers to cross cousins by terms that mix generational labels, such as father’s sister. (Kottak describes the Omaha terminological system as “bifurcate merging” kinship terminology.)
FILM SYNOPSIS

Strange Relations

The one film that accompanies this unit is an episode from the Millennium series by the anthropologist David Maybury-Lewis entitled Strange Relations.

Strange Relations takes a comparative, ethnological approach to the subject of love and marriage. The film offers vivid and evocative portrayals of monogamous, polygynous, and polyandrous marriages in different cultures around the world. In each case, Maybury-Lewis describes the tension between romantic love and social responsibility, and he does so in an especially engaging manner. After watching the film, you should be able to answer these questions: How do monogamous, polygynous, and polyandrous marriages differ from each other? In what ways are they the same? Which societies are portrayed in the film as examples of each? Where are they located? Why is romantic love a peculiar basis for marriage? When did romantic love become a basis for marriage in Western societies? In what ways are romantic love and familial responsibility at odds with each other?

The film begins with a myth told by the Nyinba people of Nepal: a story of spirits so fearsome that the people will not say their name—they are thought to kill children and the weak. Condemned to live eternally between life and death, their crime was adulterous and passionate love. The myth is only 30 years old, for only that recently has romantic love come to threaten their society.
The Nyinba of Nepal are an agricultural, patrilineal, and polyandrous society. They have no word for love—the closest they come is “beautiful from the heart.” Zumkhet and Sonam meet at a dance (men and women, fully clothed, dancing men on one side and women on the other of a fire) which their elders regard as erotic and dangerous. They are each unhappy in their marriages and go to a holy man to give them sanctuary while divorces from their former spouses are set in motion. Zumkhet comes to live in Sonam’s household, consisting of his father and mother and his three brothers. Zumkhet has her first child, by Sonam’s older brother, Ghoka. She is traditional, believing in the polyandrous system of her culture: the family and the family holdings are held together through the one wife. More modern Nyinba, following a more romantic notion, split into couples and partition the land. Sonam leaves for school and Zumkhet muses on what is better: education and change, or the old ways.

Next we go to the Wodaabe of Niger in north central Africa, a pastoral, patrilineal, polygynous people. We hear the story of Fajima, a “given wife” who wants to leave her arranged marriage and become a “love wife.” She can do this because she has no children. She arranges to meet Djajeejo at the gathering of the tribe at the market and Yikke dance. Though Djajeejo has two wives, both with children, he wants a new wife. The two of them, Djajeejo and Fajima, run off together, madly in love, though when they return to Djajeejo’s camp it is clear that Fajima has become just another wife. Women don’t leave their husbands even though they don’t welcome the new wife because they would have to leave their children. Fajima says that she is still a “follower” (which is also the word for “wife” among the nomadic Woodaabe), but that now she follows her heart.
Maybury-Lewis takes us to the land of the troubadours and tells us about the West’s version of romantic love: Courtly Love, which made it clear that love and marriage are opposites. Romantic love is that dangerous heresy that threatens the family; marriage is about property and responsibility, while romantic love is about freedom and selfishness (which is why Maybury-Lewis calls it “that selfish madness”). Romantic love is temporary and fleeting, despite its intensity while it lasts--and it’s a good thing it doesn’t last, because it would destroy us if it did. Maybury-Lewis explains that couples who manage to stay together for a lifetime share a different kind of love, one that is less selfish, less demanding, and less possessive. That’s the kind of love that societies need, because they need people who will live for the children, not those who will die for love. After a brief return to the land of the troubadours, there is a story of a blended family in Canada—his second marriage, her first, though she already has two children.
TEST QUESTIONS

1. __________________________ is the cultural rule that requires individuals to marry inside their own culturally-defined group.

2. __________________________ relatives are people who are related to each other by marriage.

3. In the film Strange Relations, the __________________________ society is shown as an illustration of a monogamous society, the __________________________ society is shown as an illustration of a polyandrous society, and the __________________________ society is shown as an illustration of a polygynous society.

4. The __________________________ terminological system is a bilateral system that applies a unique descriptive term to each relative, specifying that relative’s link to ego.

5. As depicted in the film Strange Relations, the Nyinba can be found in the country of __________________________, and the Wodaabe can be found in the country of __________________________.

6. __________________________ is the rule that requires marital partners to live in the vicinity of the wife’s relatives, also called __________________________.

7. __________________________ descent systems trace descent through the father’s side of the family through the male line only; they are also called __________________________ descent systems.

8. A(n) __________________________ is the offspring of an individual’s parents’ siblings that is related to the individual through siblings of the same sex on the parents’ generation.

9. __________________________ is the form of marriage that is least accepted and least practiced among the world’s cultures.

10. A(n) __________________________ descent system traces descent only through one sex or the other.

11. A total of __________________________ of the six terminological systems apply the same terms to each member of the nuclear family.

12. As David Maybury-Lewis explains in the film Strange Relations, there is a tension between romantic love and marriage in every culture in the world, because societies need people who will __________________________ for the children, not people who will __________________________ for love.
13. The terminological system is a unilineal system that is invariably uterine and that calls cross-cousins by a term that mixes generations.

14. ___________________________ is the cultural rule that prohibits individuals from marrying outside their own culturally-defined group.

15. The ___________________________ terminological system is the predominant system used in contemporary U.S. culture.

16. ___________________________ is the form of marriage that consists of one husband and two or more wives.

17. The terminological system that calls both cross and parallel cousins “brother” and “sister” is the ___________________________ system.

18. A(n) ___________________________ is a nuclear family consisting of an individual and his or her spouse and children.

19. Cultural customs and traditions that specify where the spouses should live once they get married are called ___________________________ rules.

20. As David Maybury-Lewis suggests in the film Strange Relations, romantic love between two people ___________________________ [can or cannot?] last a lifetime, and marriages between two people ___________________________ [can or cannot?] last a lifetime.

21. A(n) ___________________________ consists of a married couple and their children who live with them.

22. ___________________________ is the rule that requires marital partners to establish an independent residence apart from either the husband’s or the wife’s relatives.

23. The ___________________________ terminological system is a unilineal system that is invariably agnatic and that calls cross-cousins by a term that mixes generations.

24. The terminological system that calls both cross and parallel cousins “cousin” is the ___________________________ system.

25. ___________________________ is the form of marriage that consists of the union of one husband and one wife.

26. The ___________________________ terminological system is a unilineal system that occurs in both patrilineal and matrilineal varieties.

27. The ___________________________ terminological system is a bilateral system that extends nuclear family terms outside the nuclear family on a generational basis.
28. In contemporary U.S. culture, the rules that expect individuals to take into account the race of their potential spouses are examples of rules of ________________________.

29. A(n) ________________________ descent system traces descent through both the mother’s and father’s side of the family through both male and female lines.

30. The postmarital residence rule of ________________________ is associated with foraging and industrialist societies, while the postmarital residence rules of ________________________ and ________________________ are associated with pastoral, horticultural, and agricultural societies.

31. ________________________ is the cultural rule that prohibits individuals from marrying inside their own culturally-defined group.

32. ________________________ descent systems trace descent through the mother’s side of the family through the female line only; they are also called ________________________ descent systems.

33. In the film Strange Relations, David Maybury-Lewis uses the phrase “that selfish madness” to refer to ________________________.

34. Among the Nyinba, as described in the film Strange Relations, the closest approximation for the word “love” is the phrase ________________________.

35. A(n) ________________________ is a nuclear family consisting of an individual and his or her parents and siblings.

36. Cultural customs and traditions that specify whom one can and cannot choose as a marital partner are called ________________________ rules.

37. ________________________ is the form of marriage that is the most widely accepted ideal form of marriage among the world’s cultures.

38. A(n) ________________________ consists of a woman and her children who live together in a household apart from the woman’s sexual partner(s) and/or the children’s father(s), even though that man or men may maintain ongoing sexual and parental relationships with the members of the household.

39. ________________________ is the form of marriage that consists of one wife and two or more husbands.

40. The ________________________ terminological system is a bilateral system that restricts nuclear family terms to the nuclear family but lumps both affinal and consanguineal relatives outside the nuclear family on a generational basis.
41. ___________ is the postmarital residence rule that is characteristic of contemporary U.S. culture.

42. ___________ are culturally-specific systems for tracing an individual’s line of biological ancestry.

43. A(n) ___________ is the offspring of an individual’s parents’ siblings that is related to the individual through siblings of the opposite sex on the parents’ generation.

44. As described in the film *Strange Relations*, the Wodaabe word for “wife” is the same as the Wodaabe word for ___________.

45. ___________ relatives are people who are related to each other by biological descent.

46. ___________ is the cultural rule that requires individuals to marry outside their own culturally-defined group.

47. ___________ is the rule that requires marital partners to live in the vicinity of the husband’s relatives, also called ___________.

48. ___________ is the form of marriage that is most commonly practiced around the world.

49. In contemporary U.S. culture, the rules that require individuals to take into account the familial relationship of potential spouses who are related to them are examples of rules of ___________.

50. ___________ is the term applied to marriages that consist of three or more spouses without specifying the sex of the spouses involved.
Chapter 7

Cultural Universals:
Political Organization

LEARNING OBJECTIVES

At the completion of this unit, you will be able to describe the four basic types of political organization. You will be able to describe the differences between power and authority in political contexts, and you will be able to describe the two types of egalitarian societies, bands and tribes, as well as the two types of stratified societies, chiefdoms and states. Finally, you will be able to describe the similarities and differences between warfare in bands and states, and you will be able to describe the emic and etic reasons for war in both cases.
LECTURE OUTLINES

I. Political Organization

the way a society is organized to allocate power and authority over decisions that affect the group as a whole (i.e., social mechanisms for maintaining internal and external order)

authority: the culturally-recognized right to make decisions

power: the practical ability to impose will through coercive means

A. Egalitarian Societies

societies in which all members have essentially equal amounts of political and economic power and authority

1. Bands

extremely small kin-based societies (all members are related through consanguineal or affinal ties) that build temporary camps and that are found among foragers;

bands have no formal government or legal system, and no formal leadership positions; political control is exercised by consensus mediation

example of a band society: !Kung San

2. Tribes

small kin-based societies that build semi-permanent villages and that are associated with non-intensive food producers (i.e., pastoralists & horticulturists);

tribes have no formal government or formal legal system; political control is exercised through a formal leadership position called headman (who has limited authority and no power)

example of a tribal society: Xavante
B. Stratified Societies

societies in which members have unequal amounts of political and economic power and authority based on the level of society they belong to; all stratified societies have at least two levels—most contemporary stratified societies have several levels

1. Chiefdoms

large kin-based societies that build permanent towns and that are associated with agriculture; formal political organization consisting of a hereditary nobility; political control is exercised through the formal office of chief (who has substantial authority and power)

example of a chiefdom society: pre-contact Hawaii

2. States

extremely large class-structured societies that build permanent cities and that are found only in agricultural and industrial societies; states have a formal government and a formal legal system that takes many different forms, but all states place very extensive power and authority in the hands of a relative few

examples of a state society: United States of America, ancient Egypt

political organization in North American Indian societies at the time of sustained European contact (which began October 12, 1492)
II. Warfare in Bands and States

A. Bands

1. Characteristics of Band Warfare
   - small scale confrontations
   - low casualty rate
   - lack of military specialization
   - little or no specialized technology of warfare

2. Emic Reasons for Band Warfare
   - obtain revenge for personal grievances—e.g., raiding (killing & wounding), wife stealing, verbal insults

3. Etic Reasons for Band Warfare
   - indirect regulation of population growth through female infanticide; foraging subsistence strategy doesn’t support the technology or occupational specialization for contraception or abortion, so there are few effective ways of directly manipulating the reproductive strategy; since foraging requires low population density, warfare in bands provides a strong motivation for killing infants (since male warriors are needed for fighting with hand-held weapons)

B. States

1. Characteristics of State Warfare
   - massive-scale confrontations
   - enormous casualties
   - presence of permanent military specialists
   - highly specialized technology of warfare

2. Emic Reasons for State Warfare
   - preserve and expand political and religious ideologies

3. Etic Reasons for State Warfare
   - preserve and expand access to strategic resources

III. Warfare in Tribes
Dead Birds: The Dugum Dani of New Guinea

The following additional lecture notes are intended especially for internet students (although they may also be helpful to classroom students who were absent from the lecture presentation).

In Cultural Anthropology, Kottak provides a detailed discussion of the four kinds of political organizations identified by anthropologists (i.e., bands, tribes, chiefdoms, states). In the classroom, I emphasize that these terms have special anthropological meanings that are not always the same as the ordinary meanings that are attached to them. For example, we speak of American Indian “tribes” in this country, but in the anthropological sense of the term, no Native American in the United States lives in a tribal society today. In fact, there have long been other forms of political organization among American Indians besides tribal organization. When Columbus landed in the Bahamas on October 12, 1492, for example, there were bands, tribes, chiefdoms, and states among North American Indians (the Aztec represented the one state society, the Iroquois and the Cherokee were among several chiefdom societies, and there were some tribes and a few bands as well).

In discussing the film Dead Birds in class, I explain that warfare is universal in human societies (all groups go to war at some point in their history), and I contrast the causes and consequences of warfare in the smallest and simplest kinds of societies (bands) with the largest and most complex kinds of societies (states). The film Dead Birds portrays warfare among a tribal society, which falls somewhere between the two extremes (although, as an egalitarian society, tribes are closer to bands than they are to states).

To summarize briefly: warfare among the Dugum Dani (the people portrayed in the film) features larger scale confrontations than band warfare but smaller scale confrontations compared to state warfare; the Dugum Dani have a higher casualty rate, more military specialization, and more specialized technology of warfare than bands, but a much lower casualty rate, much less military specialization, and much less specialized technology of warfare than states. The *emic* reasons for warfare among the Dugum Dani fall somewhere between the band and state extremes: as described in the film summary below, the Dugum Dani are motivated partly by the desire for personal vengeance and partly by ideology (they believe the ghosts of the slain require retribution to prevent natural calamities). The *etic* reasons for warfare among the Dugum Dani are essentially identical to the *etic* reasons among band societies: warfare provides the motivation for rearing male warriors at the expense of females in order to protect the society. Lacking contraception or abortion, the only effective means of population regulation available to the Dugum Dani is infanticide—and the threat of warfare encourages them to practice *female* infanticide so that they can preserve what they perceive to be the more valuable members of the society (the greater value placed on males is dramatically evident in the film, which shows young girls having one or more fingers chopped off to commemorate the death of a relative—young boys never have their fingers chopped off, because they’ll need all their dexterity to wield their spears and bows & arrows in war).
FILM SYNOPSIS

Dead Birds

The first of the two films that accompany this unit is a classic ethnographic film entitled Dead Birds.

Dead Birds is an extraordinary film that offers an authentic portrait of a vanished way of life. Well into the second half of the 20th century, the peoples who lived in the mountainous interior of New Guinea practiced continuous warfare. Dead Birds documents the lives of one such people, the Dugum Dani, shortly before they finally abandoned their warlike lifestyle in the 1970’s. It is a remarkable film that includes extensive footage of actual warfare. After watching the film, you should be able to answer these questions: What is the subsistence strategy of the Dugum Dani? What form of political organization do they have? How frequently do they engage in warfare? What kinds of weapons do they use? Do they use part-time or full-time military specialists? What is the casualty rate that results from their warfare? What are the emic reasons for warfare among the Dugum Dani? What are the etic reasons?

A Dugum Dani warrior mans his watchtower overlooking the battleground
Dead Birds is a cinematographic interpretation of the life of a group of Grand Valley Dani, who are mountain Papuans in West New Guinea (Irian Barat, Indonesia), studied by the Harvard-Peabody Expedition (1961-1963). This film was made by Robert Gardner in 1961, before the area was pacified by the Dutch government. The film focuses on Weyak, the farmer and warrior, and on Pua, the young swineherd, following them through the events of Dani life: sweet potato horticulture (young unmarried men are shown using digging sticks to prepare the fields), pig keeping (young boys are shown playing games while their pigs forage), salt winning (women are shown hiking to mountain streams where they soak large banana leaves in the brackish water to bring salt back to their villages), battles (men are shown engaging in pitched battles, waged with spears and bows-and-arrows, that involve scores of combatants), raids (the body of an enemy warrior is shown who was killed when he was caught trying to steal a pig at night), and ceremonies (a funeral is shown for a little boy speared to death by the enemy).

The following comments are from filmmaker Robert Gardner [with bracketed additions from me—James Lett]:

“Dead Birds is a film about the Dani, a people dwelling in the Grand Valley of the Baliem high in the mountains of West Irian. When I shot the film in 1961, the Dani had an almost classic Neolithic culture. They were exceptional in the way they focused their energies and based their values on an elaborate system of intertribal warfare and revenge. Neighboring groups of Dani clans, separated by uncultivated strips of no man’s land, engaged in frequent formal battles.

“When a warrior was killed in battle or died from a wound and even when a woman or a child lost their life in an enemy raid, the victors celebrated and the victims mourned. [It was rare for more than one or two men to be seriously wounded or killed in battle. The Dugum Dani were satisfied when any single one of the enemy was killed—it didn’t matter if it was a man, woman, or child. When someone was killed, there was a temporary truce for a couple of days, so that the victorious side could hold a celebration (focused on dancing, singing, and feasting) and the losing side could hold a funeral (in which the body of the deceased was cremated). To commemorate the death of a relative killed by the enemy, the Dani would chop off the fingers of young girls at the first knuckle—most Dani women had more than one finger chopped off by the time they were grown.]

“Because each death had to be avenged, the balance was continually being adjusted with the spirits of the aggrieved lifted and the ghosts of slain comrades satisfied as soon as a compensating enemy life was taken. [The Dani believed that the ghosts of the slain would bring about sickness, death, crop failures, and other disasters if their killing was not avenged; because they believe that the ghosts come out at night, the Dugum Dani are reluctant to venture outside after dark.]

“There was no thought in the Dani world of wars ever ending, unless it rained or became dark. [Rain was usually enough to call a halt to the fighting for the day, but either rain or darkness would bring about only a temporary cessation to that particular day’s battle—the war itself would continue the next day there was good weather.] Without war there would be no way to satisfy the ghosts. Wars were also the best way they knew to keep a terrible harmony in a life which would be, without the strife they invented, mostly hard and dull.
“Dead Birds has a meaning which is both immediate and allegorical. In the Dani language it refers to the weapons and ornaments recovered in battle. Its other more poetic meaning comes from the Dani belief that people, because they are like birds, must die.

“In making Dead Birds certain kinds of behavior were followed, never directed. It was an attempt to see people from within and to wonder, when the selected fragments of that life were assembled, if they might speak not only of the Dani but also of ourselves.”—Robert Gardner, 1964
FILM SYNOPSIS

First Contact

The second of the two films that accompany this unit is an award-winning documentary entitled First Contact.

First Contact describes the initial encounter between the indigenous inhabitants of the interior of New Guinea and foreign invaders in the 1930’s. At the beginning of that decade, gold prospectors from Australia were the first outsiders to penetrate the mountain valleys of central New Guinea. One group of prospectors recorded that encounter on film; First Contact combines that footage with contemporary interviews to create an extraordinary record of acculturation. After watching the film, you should be able to answer these questions: What was the subsistence strategy of the indigenous inhabitants of New Guinea in 1930? How much contact had those people had with outsiders prior to the arrival of the prospectors? What were the prospectors’ motives for interacting with the native inhabitants? What crimes, if any, did the prospectors commit against the native people of New Guinea? What was the attitude of the prospectors about their actions, both at the time and years after the fact? In what ways is this acculturation experience typical of the acculturation that has taken place throughout the world in the last half millennium?

A New Guinea native in the 1930’s wearing a headdress fashioned from material retrieved from the prospectors’ trash pile

The indigenous people of New Guinea who are portrayed in First Contact are closely related to the Dugum Dani of Dead Birds—this is the story of what happened to the Dugum Dani and their neighbors in the 20th century, and it’s a story that’s very similar to what has happened to countless
indigenous peoples around the world during the last 500 years of European expansionism. When Columbus and Cortez ventured into the New World there was no camera to record the drama of those first encounters. But, in 1930, when the Leahy brothers penetrated the interior of New Guinea in search of gold, they carried a movie camera. Thus they captured on film their unexpected confrontation with thousands of Stone Age people who had no concept of human life beyond their valleys. This amazing footage forms the basis of First Contact.

Yet there is more to this extraordinary film than the footage that was recovered. Fifty years later some of the participants are still alive and vividly recall their unique experience. The Papuans tell how they thought the white men were their ancestors, bleached by the sun and returned from the dead. They were amazed at the artifacts of 20th century life such as tin cans, phonographs and airplanes. When shown their younger, innocent selves in the found footage, they recall the darker side of their relationship with these mysterious beings with devastating weapons.

The film centers on interviews with the two surviving Leahy brothers (the third, the eldest brother and acknowledged leader, died before the film was made). The producers allow the Leahy brothers to speak for themselves, and the narrator offers no comments or judgments—but the film is all the more powerful for that, because the Leahy brothers unwittingly indict and convict themselves. They describe their actions in the 1930’s when they were prospecting for gold among the native peoples of New Guinea who had never seen or heard of outsiders, and from their own accounts it’s clear that the Leahy’s engaged in murder, assault, theft, prostitution, and other forms of strikingly immoral exploitation—and yet neither of the two surviving Leahy brothers expresses any remorse. On the contrary, they appear to be entirely satisfied with themselves; they believe their actions were completely justified and appropriate, and they don’t feel that they owed the people of New Guinea any more consideration than what they extended them at the time.

The interviews with the New Guineans are especially poignant, because these people are well aware of how fundamentally their lives have changed and of how exploited they had been years before when they were too innocent, and too powerless, to resist. We hear from men who recall how their comrades were shot to death by the invading prospectors, and we hear from women who were forced to work as prostitutes for the Australians—some of them became pregnant as a result, and reared their children without any support from the children’s fathers.

“The film is ironic, poignant, and often chilling. It’s ironic to see recent shots of the natives, once so isolated, sporting Western clothes and chuckling over old photos of themselves. It’s poignant to hear women recall being sexually “sold” to the visitors despite their fears. It’s chilling to hear the Leahy brothers matter-of-factly explain why they killed their less hospitable hosts—forgetting that, whatever the danger may have been, no invitation had been offered them in the first place. It’s a disturbing film, full of head-on challenges to colonial and racist attitudes. Yet it’s a deeply human experience, too: Its message, strongly implied if not stated, is that some kind of rapport is bound to develop in any situation, however clouded the circumstances may be by isolation, ignorance, and the urge for domination” — Christian Science Monitor

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This article was written years ago when I was working as a television newscaster, and it was published in a journal intended for professional broadcast journalists. The main focus of the article is on the similarities and differences between anthropology and journalism, but its principal significance for our course is its discussion of the ways in which journalists unwittingly act as agents of governmental thought control—i.e., the ways in which the mass media in modern societies assist the political organization in its efforts at internal social control.

Although trained as a cultural anthropologist, I work as a broadcast journalist, which makes me something of an anomaly among anthropologists and journalists alike. In fact, however, there are fundamental similarities between the two professions, and I find it remarkable that those similarities are not more widely appreciated. As an anthropologist, I have been trained to observe, record, describe, and if possible, to explain human behavior, and that is the essence of what I do every day as a journalist.

Cultural anthropology, for those who may not be familiar with an admittedly esoteric discipline, is a social science, like sociology, psychology, economics, or political science. In many ways, though, anthropology is unique. Unlike the other social sciences, which restrict their investigations to a specified dimension of human experience, anthropology attempts to take into account every aspect of human life, from language to politics to religion to economics to sex. Anthropology alone among the social sciences is comparative, historical, and evolutionary; anthropology alone attempts to develop an integrated understanding of physiological, psychological, ecological, and sociological phenomena. In short, anthropology, like journalism, is eclectic. Anthropologists, like journalists, are generalists.
There is, however, one crucially important difference between anthropology and journalism. Unlike anthropology, journalism lacks a systematic foundation of explicit theory and method. What is the journalistic perspective? How should journalism be practiced? There are no widely-accepted, consistent answers to these questions among journalists. Indeed, there are no standards of training and accreditation required for journalists. To be recognized as a journalist, you simply have to work as a journalist—and that’s true in very few other professions. Lacking both a reliable methodology for gathering information and a sound theoretical basis for organizing knowledge, journalists have little choice but to practice a journalism that is both uninformed and unanalytical. From an anthropological point of view, journalism is exceedingly uncritical.

Ironically, journalists are popularly perceived as irreverent, disrespectful, and even blasphemous critics of society—the “nabobs of negativism” who delight in attacking long-cherished traditions—when in fact most journalism unquestioningly supports the dominant cultural value system. The members of every culture share a particular world view (an understanding of how the cosmos is ordered and of how reality is defined) and a particular ethos (a normative sense of how people should behave and how the world should operate). Rather than question their world view and ethos, journalists generally evaluate anything and everything through the prism of their own cultural orientation, usually without being aware that they are doing so. Like most people everywhere, journalists tend to be, in anthropological jargon, ethnocentric. To compound the problem, few journalists are knowledgeable about the processes and causes of sociocultural phenomena, even though journalists regularly report on human social behavior...

I think I can offer convincing illustrations of these generalizations. On October 23, 1984, one year after the bombing of the U.S. Marine headquarters at the Beirut airport, CBS News broadcast a report by correspondent Bruce Hall on a memorial service at Camp LeJeune, North Carolina. The report dramatically conveyed the pain suffered by the bereaved relatives by focusing on a single family whose nineteen-year-old son had been killed in the bombing. Hall made very effective use of his audio-visual medium to convey several levels of meaning simultaneously. The one-and-a-half minute report included a close-up of a weeping eye, a shot of a small child carrying a bouquet of flowers in a cemetery, another of an American flag flying at half-mast, and a natural sound bridge of the Marine choir singing the Battle Hymn of the Republic.” The story also included a brief sound bite from the Commandant of the Marine Corps: “Blessed are the peacemakers, for they shall be called the sons of God.” Hall’s report was powerful, evocative, and moving—a solid piece of television journalism.

What struck me most about the story, however, was what the reporter did not say. Every complex, stratified, state society in the history of the world (from the pre-Colombian Aztecs to the kingdoms of medieval Europe to the
contemporary Soviet Empire) has relied upon thought control as one important means of protecting the power of the ruling elite and of persuading the general population to support the state’s policies. In pre-industrial states, such thought control was exercised primarily through magico-religious institutions. In medieval and Renaissance Europe, for example, the absolute authority of the monarchy was sanctified by the doctrine of the divine right of kings.

In modern, industrialized societies (of which the United States would be the pre-eminent example), a very powerful means of thought control can be found in the mass media. Monuments and memorial services to honor the war dead fulfill several important functions for a ruling elite interested in preserving its power. Such symbols and rituals help persuade the general population that the war effort was necessary and worthwhile and that the sacrifices made by the fallen soldiers and their families have not gone unrecognized or unappreciated. The bereaved family members can console themselves that something of supra-individual importance was achieved by their contribution. By direct emotional appeal to strongly-held values—through the deliberate manipulation of highly-charged patriotic symbols (flags, uniforms, songs, etc.)—such memorial services deflect rational, dispassioned consideration of the state’s policies and actions.

When the producers and assignment editors at CBS made the judgment that the memorial service at Camp LeJeune was newsworthy and deserved coverage, they presumably thought that the citizens of the United States should be informed about the consequences of American military involvement in Lebanon. The resulting coverage, however, could not have better served the interests of those elements of the government responsible for the U.S. experience in Beirut. This is not to make a judgment about whether that experience was good or bad. My point is simply that broadcast journalists did nothing to challenge the perception of the episode that the state wished to convey. In fact, broadcast journalists were the primary agents of the state’s efforts at thought control.

One other example—and again, this one concerns an analysis that broadcast journalists failed to make. In his 1985 State of the Union address, broadcast live by all the major networks, President Reagan told the nation that Americans had rediscovered many of their traditional values. Referring to the supposedly enduring appropriateness of the Protestant work ethic, the President asserted that “work ennobles us...no matter how seemingly humble our jobs.”

I was struck, once again, by the absence of a well-informed perspective in the post-address “analyses” offered by broadcast journalists. As in all stratified societies, there is pronounced economic inequality in the United States. Also, as in all state societies, there are police and paramilitary forces in this country whose function it is to preserve the status quo and to ensure that a large proportion of the wealth in the society remains concentrated in the hands of a relative few. To persuade the majority of American citizens to willingly accept the fact of economic inequality, however, the
state relies primarily not upon physical coercion but upon diffuse means of thought control; hence the persistence in our society of the work ethic.

Americans, rich and poor alike, are taught that the poverty-stricken are responsible for their own plight. The work ethic holds, against all objective evidence, that hard work, thrift, and perseverance will guarantee material success. In point of fact, of course, the world-wide supplies of food, water, energy, and mineral resources are finite and insufficient to allow even a sizeable minority to approach the standard of living enjoyed by the economic elite, no matter how hard that minority works. The surest way to wealth in our society is to inherit money, and that, in fact, is the path to riches taken by the overwhelming majority of this country’s most affluent citizens.

Millions of Americans have no choice but to spend their lives working in low-paying, monotonous, unsatisfying jobs. Whether such work is or is not “ennobling” is, of course, a value judgment, and government officials, like everyone else, are entitled to their values. In all probability, President Reagan is sincere in his pronouncements about the work ethic. He very likely believes that his world view embodies an accurate representation of social reality.

In point of fact, however, it does not, and that seems to me to be an important part of the story about the President’s State of the Union speech. If journalists have a responsibility to report the truth, they have an obligation to call attention to the intended and achieved effects of such official pronouncements.

My point is that American television news generally does little to inspire critical thought and reflection about American social life. Television news rarely makes people examine their world view or question their ethos. Instead, television news regularly reaffirms their preconceptions and reinforces their prejudices. There’s nothing new about the news.

As I see it, there are three basic problems with American television journalism. First, most television journalists are burdened with the heavy baggage of unexamined ethnocentrism. Second, most television journalists are uninformed and under-educated about important aspects of human social life. Third, most television journalists are laboring under a misguided and misconceived notion of objectivity which blinds them to journalism’s true purpose...

Given these problems, why have I chosen to work as a broadcast journalist? For a number of reasons. First, because I would like to communicate anthropological insights and perspectives to the general public, and traditional anthropological media are ill-equipped to serve that audience. Second, because I believe that journalism could benefit from the infusion of a broadly informed, analytical perspective in the ways that I have outlined above. Third, and perhaps most importantly, because I believe that the visual broadcast medium has the power and potential to be the most important medium of mass communication in the history of the world...
TEST QUESTIONS

1. The absence of permanent military specialists is characteristic of warfare among ________________, and massive-scale confrontations are characteristic of warfare among _________________.

2. As depicted in the film *First Contact*, the attitude of the surviving Leahy brothers towards their youthful activities in New Guinea could be characterized as _________________.

3. ________________ refers to the practical ability to impose will through coercive means.

4. Obtaining revenge for personal grievances is the ________________ reason for warfare among _________________.

5. The political organizations that are associated with the subsistence strategy of horticulture are _________________.

6. ________________ are extremely small egalitarian societies with no formal leadership positions in which political control is exercised by consensus mediation.

7. The article *Anthropology and Journalism* argues that television news ____________ [rarely or frequently?] makes people examine their world view and/or ethos, and that television news generally ____________ [challenges or confirms?] their preconceptions.

8. As depicted in the film *Dead Birds*, the important value of male warriors for the Dugum Dani is forcefully symbolized by chopping off the fingers of ________________ to commemorate the death of a relative killed by the enemy.

9. As portrayed in the film *First Contact*, what crimes, if any, did the Leahy brothers commit against the indigenous peoples while they were in New Guinea prospecting for gold?

10. A(n) ________________ is a formal leader in an egalitarian society who has strictly limited authority and no power whatsoever; his position is usually inherited.

11. ________________ can be defined as the way a society is organized to allocate power and authority over decisions that affect the group as a whole.

12. Societies in which all members have essentially equal amounts of political and economic power and authority are called ________________ societies.

13. As depicted in the film *Dead Birds*, the Dugum Dani dispose of the bodies of their dead by _________________.

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14. ________________ are large kin-based agricultural societies that build permanent towns.

15. As depicted in the film Dead Birds, the women travel to streams and ponds in the mountains where they soak banana leaves in the water in order to bring ________________ back to their villages.

16. Massive-scale confrontations are characteristic of warfare among ________________, and extremely high casualty rates are characteristic of warfare among ________________.

17. ________________ are small egalitarian societies with no formal government but that do have a formal leadership position called headman.

18. As depicted in the film First Contact, the initial sustained contact between the indigenous peoples of New Guinea and the outside world took place in the decade of the ________________.

19. The article Anthropology and Journalism refers to a broadcast of the State of the Union address by President ________________ in the year ________________ as an example of the uncritical perspective journalists typically bring to their reporting.

20. As depicted in the film Dead Birds, casualty rates from the confrontations on the battleground are relatively ________________ [low or high?] in most cases, and rainfall is ________________ [usually or rarely?] enough to persuade the men to suspend battle.

21. The political organizations that are associated with the subsistence strategy of agriculture are ________________.

22. From the facts depicted in the film Dead Birds, it can be inferred that warfare among the Dugum Dani has the indirect effect of regulating population growth through the correspondingly high rate of ________________.

23. The absence of permanent military specialists is characteristic of warfare among ________________, and a highly specialized technology of warfare is characteristic of warfare among ________________.

24. As depicted in the film Dead Birds, the principal weapons of war used by the Dugum Dani are ________________.

25. ________________ are extremely large class-structured agricultural or industrial societies that build permanent cities.
26. As depicted in the film *Dead Birds*, the emic reason for warfare among the Dugum Dani is to ____________________________________________________________.

27. Preserving and expanding political and religious ideologies is the __________ reason for warfare among _____________________________.

28. ________________________________ are stratified societies with a formal political organization consisting of a hereditary nobility that exercises political control through the formal office of chief.

29. As depicted in the film *Dead Birds*, the Dugum Dani rarely venture outside at night because of their fear of _________________________________.

30. As explained in the article *Anthropology and Journalism*, in order to persuade the majority of American citizens to accept the fact of economic inequality, the state relies primarily upon the ideology of _________________________________________.

31. As depicted in the film *Dead Birds*, the warring factions among the Dugum Dani enter into a temporary truce whenever _________________________________________.

32. The political organizations that are associated with the subsistence strategy of pastoralism are _________________________________________.

33. As depicted in the film *Dead Birds*, the Dugum Dani feel that they have achieved their goal when they manage to kill __________________________________________ [what kind of person?].

34. Little or no specialized technology of warfare is characteristic of warfare among ________________________________, and small-scale confrontations are characteristic of warfare among _________________________________.

35. __________________________________________ are stratified societies with a formal government that takes many different forms but that always places very extensive power and authority in the hands of a relative few.

36. __________________________________________ are small kin-based pastoral or horticultural societies that build semi-permanent villages.

37. As depicted in the film *Dead Birds*, the Dugum Dani can restore the balance lost when the enemy has been victorious by killing a total of ___________________________ of the enemy.

38. Preserving and expanding access to economic resources is the ________________ reason for warfare among _________________________________.

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39. Societies in which members have unequal amounts of political and economic power and authority based on the level of society to which they belong are called __________ societies.

40. As depicted in the film Dead Birds, the Dugum Dani employ a plant cultivating subsistence strategy that is a relatively intensive form of __________________________, supplemented by raising semi-domesticated pigs.

41. The political organizations that are associated with the subsistence strategy of foraging are ________________________________.

42. The article Anthropology and Journalism argues that journalists in the contemporary United States are often unwitting agents of __________________________, in effect assisting the political organization in its efforts at internal social control.

43. A(n) __________________________ is a formal leader in a stratified society who has substantial authority and significant power; his position is hereditary, and it is never found in industrial societies.

44. At the time of European contact in 1492, which of the following kinds of political organizations could be found in North America among the indigenous Indian societies?
   (a) bands  (b) tribes  (c) chiefdoms  (d) states  (e) all of the above.

45. The presence of permanent military specialists is characteristic of warfare among __________________________, and low casualty rates are characteristic of warfare among __________________________.

46. __________________________ refers to the culturally-recognized right to make decisions.

47. __________________________ are extremely small kin-based foraging societies that build temporary camps.

48. __________________________ can be defined as the social mechanisms used by a society to maintain internal and external order.

49. The indirect regulation of population growth through female infanticide is the __________________________ reason for warfare among __________________________.

50. Extremely high casualty rates are characteristic of warfare among __________________, and a highly specialized technology of warfare is characteristic of warfare among __________________.
Chapter 8

Cultural Universals:
Religion and Art

LEARNING OBJECTIVES

At the completion of this unit, you will be able to define religion from an anthropological point of view and to identify it as a cultural universal. You will also be able to describe the shamanic, communal, olympian, and monotheistic types of religious organization, and you will be able to correlate those types of religious organization with the associated types of subsistence strategies and political organizations. In addition, you will be able to describe ritual from an anthropological point of view, and you will be able to describe the five types of ritual (i.e., rituals of technology, therapy, ideology, salvation, and revitalization). Finally, you will be able to define art from an anthropological point of view.
A Note about Science & Religion

The topic for this unit, religion, is different in one important respect from the other topics we’ve considered in this course—namely, it’s a topic that is likely to inspire intense emotional reactions in many people, because many people hold religious beliefs that are profoundly important to them.

It’s important to realize, therefore, that there’s a very significant difference between the scientific approach to understanding and the religious approach to understanding. The scientific approach is based exclusively upon reason and observation, whereas the religious approach is based ultimately upon faith and revelation (the contrast between these two approaches is explained in detail in the second of the two Selected Readings at the end of this chapter). Since this is a course in anthropology, and since anthropology is a scientific discipline, that means we’re going to examine the topic of religion from a scientific perspective.

That often makes many students uncomfortable, because many students have never before been asked to evaluate religious claims from the point of view of reason and observation (instead, of course, most students, like most people, hold religious beliefs on the basis of faith and revelation). Nevertheless, the point of this unit is not to dismiss or belittle the approach of faith and revelation. Anthropology makes no implications about the moral or intellectual merits of faith and revelation; instead, anthropology ignores the approach of faith and revelation when it considers the topic of religion for the simple reason that faith and revelation are not part of the scientific approach. Naturally you’re free to draw whatever inferences you want about the merits of faith and revelation, and you certainly don’t have to defend or explain your inferences to anyone; however, your personal inferences about the merits of faith and revelation are not an appropriate topic for discussion in a science course such as this one (although they might be a very appropriate topic for discussion in a philosophy course).

Finally, you should understand that no attempt is being made to persuade you to abandon your own personal approach to the question of religious belief. Obviously you’re entitled to choose whatever approach you consider to be most appropriate for your own life, and no one imagines that you need or want a course in anthropology to give you advice or guidance about that decision (besides, the goal of a scientific discipline such as anthropology is to produce knowledge, not to inspire belief, which means that anthropology isn’t in the advice-giving business). Furthermore, as anthropologists are aware, it’s almost impossible to use scientific evidence to persuade people to abandon their religious beliefs (this is true because faith and revelation are almost always impervious to reason and observation). Thus the goal of this unit is not to persuade you to change your mind about religion (which probably wouldn’t happen anyway), but simply to enable you to understand the scientific perspective on religion. If you’ll approach this unit from that perspective, hopefully you’ll be able to consider the topic from a relatively dispassionate point of view.

For additional perspectives on the relationship between science and religion, see the references that appear in the Notes at the end of the article entitled Irreconcilable Differences: The Fundamental Incompatibility of Science and Religion in Chapter 1 of this Study Guide.
LECTURE OUTLINES

I. Religion

beliefs and behaviors concerned with supernatural (i.e., paranormal) beings and forces—religion is a cultural universal, although cultures exhibit a wide variety of often contradictory beliefs about paranormal beings and forces

A. Forms of Religious Organization

1. Shamanic Organization

centered on the services of a shaman: a paranormal specialist who derives authority directly from the paranormal realm (belief in zoomorphic deities and spirits of natural phenomena)

2. Communal Organization

group of ordinary people temporarily authorized to carry out paranormal roles (belief in various equal anthropomorphic deities who control aspects of nature)

3. Olympian Organization

centered on services of a priest: a paranormal specialist who derives authority from being ordained into an ecclesiastical hierarchy (belief in a pantheon of polytheistic anthropomorphic deities with counterbalancing powers and alliances)

4. Monotheistic Organization

centered on services of a priest (belief in a supreme anthropomorphic deity)
B. Correlates of Religious Organization

Bands: shamanic, (communal)
Tribes: communal, shamanic
Chiefdoms: olympian, communal, shamanic
States: monotheistic, olympian, communal, shamanic

II. Ritual

A formal, repetitive set of behaviors performed in a sanctified place for a specified duration

A. Rituals of Technology

rituals intended to gain control over the natural world (e.g., divination, hunting, agriculture, gambling, etc.)

B. Rituals of Therapy

rituals intended to gain control over human health (e.g., curing, witchcraft, voodoo, etc.)

C. Rituals of Ideology

rituals intended to influence individual beliefs and behaviors for the sake of the group as a whole (e.g., passage, solidarity, reversal)

1. Rites of Passage

rituals that mark a change in an individual’s status (a position in a social system, based on criteria such as age, sex, kinship, occupation, etc.)
a. Arnold van Gennep
(1909) *The Rites of Passage*

rites of passage are universal, and they have the same symbolic organization in all cultures, consisting of three stages:

Separation
Liminality
Reincorporation

b. Victor Turner
(1969) *The Ritual Process*

the stage of liminality has the same features in all rites of passage in all cultures:

Transition
Homogeneity, Equality, Anonymity
Communitas
Sexual Continence or Sexual Excess

2. **Rites of Solidarity**
(a.k.a. Social Intensification)

rituals that strengthen feelings of group membership (e.g., Sabbath worship services)

3. **Rites of Reversal**

rituals that temporarily reverse the ordinary rules of social behavior (e.g., Mardi Gras)
D. Rituals of Salvation

rituals intended to renew individual identity when that identity is seriously threatened (rituals of salvation are used only in extraordinary circumstances)
e.g., exorcism

E. Rituals of Revitalization

rituals intended to renew cultural identity when that identity is seriously threatened (rituals of revitalization are used only in extraordinary circumstances)

Steps in a Ritual of Revitalization:

1. cultural crisis
2. shamanic vision
3. institutionalization, eradication, or marginalization of the revitalization movement

e.g., the Sioux Ghost Dance Religion

III. Art

“Object, event, or other expressive form that evokes an aesthetic reaction.”

Any element of expressive culture that evokes a compelling emotional response and that provides its own intrinsic satisfactions.

Art is a cultural universal.

Art includes plastic arts (painting, sculpture, ceramics, etc.), performing arts (music, dance, drama, etc.), and literature (oral and written fiction and poetry).
The following additional lecture notes are intended especially for internet students (although they may also be helpful to classroom students who were absent from the lecture presentation).

The Lecture Outlines in the preceding pages are largely self-explanatory, because they closely parallel the material presented in the assigned chapters in Kottak’s *Cultural Anthropology*. The two exceptions concern the detailed discussion of rites of passage and the examples discussed for rituals of revitalization.

When discussing rites of passage in the classroom, I draw attention to two important figures in the history of anthropology who made significant contributions to the study of the topic. The first was a Belgian anthropologist, Arnold van Gennep, who wrote a book in 1909 entitled *The Rites of Passage*. Van Gennep made two fundamental points in the book: first, he observed that rites of passage are universal, meaning that they occur in every society in the world (rites of passage include such rituals as weddings, funerals, academic commencement ceremonies, and military basic training—rites of passage occur in both religious and secular contexts). Van Gennep’s second major point was that rites of passage always have the same essential plot or script. He characterized the script of every rite of passage as consisting of three symbolic stages, which he called *separation*, *liminality*, and *reincorporation*. At the beginning of the ritual, the persons going through the rite of passage are symbolically separated from their old status, and at the conclusion of the ritual they are reincorporated into society with their new status. In between—during the great majority of the ritual itself—the persons who are undergoing the symbolic change in status are in limbo between the old and the new: they’re betwixt and between, neither here nor there. (Think of a bride and groom going through a wedding ceremony—during the ceremony itself, they’re not really single any longer, but they’re not really married, either, until the ceremony concludes.) Van Gennep coined the term “liminality” to refer to this in-between state of limbo (he created the term from the Latin word *limen*, which means “threshold;” when you’re on the threshold of a building, you’re not really inside the building, but neither are you really outside it).

The second anthropologist to make an important contribution to the study of rites of passage was an American named Victor Turner, who published a book entitled *The Ritual Process* sixty years after *The Rites of Passage*. With access to a much more detailed ethnographic record after more than a half-century of anthropological research, Turner was able to confirm both of van Gennep’s conclusions: rites of passage are universal, and they always do have a tripartite structure consisting of separation, liminality, and reincorporation. Turner went further, however, and noticed that the stage of liminality has many distinctive features that appear time and time again in various rites of passage in cultures throughout the world. Among those features that characterize the liminal stage of a rite of passage, Turner said, are *transition* (the liminal stage is temporary), *homogeneity, equality, and anonymity* (the persons going through the rite of passage are equal, undifferentiated, and often dressed in uniform costumes—think of a commencement ceremony, or basic training in the Marine Corps), *communitas* (a term Turner coined from the same Latin root in the word *community*, by which he meant strong, intense feelings of camaraderie and emotional bonding among the persons in a liminal state), and either *sexual continence or sexual excess* (the ordinary standards of sexual behavior, sexual expression, and sexual symbolism are either de-emphasized or emphasized during a rite of passage).
Many other anthropologists have adopted Turner’s ideas and applied them to other contexts. When I conducted ethnographic research in the British Virgin Islands, for example, I noticed that certain kinds of tourists engaged in spontaneous rites of reversal that had many liminal qualities. Because they were not engaged in a rite of passage, the tourists were not technically in a state of liminality—but because their behavior was like liminality, it could be called liminoid. I published an article detailing these observations in a journal called Annals of Tourism Research; the Selected Reading on “Ludic and Liminoid Aspects of Charter Yacht Tourism in the Caribbean” will give you a good idea of what anthropologists mean by liminal characteristics.

When discussing rituals of revitalization in the classroom, I refer to the example provided by the Ghost Dance religion among American Indians in the late 19th century. As Kottak explains in Cultural Anthropology (and as outlined in the Study Guide), rituals of revitalization always follow the same pattern: first, a crisis confronts the culture (perhaps stemming from conquest, foreign occupation, disease epidemic, famine, or something of the sort), and in response a shaman emerges to announce a new vision of life (the shaman promises his followers that things will improve if they will embrace his new philosophy). As Kottak also explains, many of the world’s major religions, including Buddhism, Christianity, and Islam, originated in just this manner.

In the American West in the late 19th century, a shaman by the name of Wovoka promised the Sioux (and other Plains Indians) that their old way of life was about to be restored in a coming cataclysm that would eliminate the Americans and bring back the buffalo; Wovoka also promised that the Indians who had been killed in recent years would be brought back to life, and one of the rituals that would help make this happen was a particular dance that Wovoka taught them—hence the name “Ghost Dance” religion. The Ghost Dance religion was brutally repressed by the American military (many Indians were killed at the so-called Battle of Wounded Knee when they resisted efforts to make them stop doing the Ghost Dance), and the followers eventually lost faith in Wovoka’s promises. The religious ideas that are promoted in rituals of revitalization are sometimes eradicated, just as they were in the Ghost Dance religion, and they are sometimes marginalized, so that they are only accepted by a few people in a small sect. Sometimes, however, the ideas promoted in a ritual of revitalization become institutionalized in the society: millions of people around the world still have faith in the promises of Buddha, Jesus, and Mohammed.
FILM SYNOPSIS

Warriors of the Amazon

The first of the two films that accompany this unit is a NOVA episode entitled *Warriors of the Amazon*.

*Warriors of the Amazon* presents a vivid depiction of the culture of the Yanomami, an endangered tribe that lives in the Amazon rainforest in the border region between Venezuela and Brazil. The central episode of the film is a feast given in an attempt to reconcile past differences between two antagonistic villages; in the process of chronicling that event, however, the film describes several elements of Yanomami religion, including the ways in which Yanomami shamans use hallucinogenic drugs to commune with the spirit world, and the ways in which they use magic to combat modern diseases. After watching the film, you should be able to answer these questions: What are the *spiritual beliefs* of the Yanomami? How do they *explain* events in life such as misfortune and disease? Are the spiritual beliefs of the Yanomami vulnerable to *empirical refutation*, as far as the Yanomami are concerned? How do the spiritual beliefs of the Yanomami *compare* to the spiritual beliefs of other cultures, such as your own?
The Yanomami people have lived in a remote part of the Amazon rain forest in Venezuela, South America, for centuries with little or no contact from outside society. Within the past 40 or 50 years, however, contact from non-native groups outside the Yanomami culture has increased, with both positive and negative results. This NOVA program follows a film crew as it documents a group of Yanomami people and explores the relationship between the group and a nearby group and some of the influences that threaten their lives. The program also profiles the daily life of the Yanomami people and highlights their life-cycle rituals, such as healing ceremonies and death practices.

Once numbering more than 25,000, the Yanomami population has been cut in half in the past 40 years. It’s a disturbing trend, but one that’s unfortunately familiar in the region: it’s estimated that on average 80% of each Amazonian Indian community dies within the first century of contact with outsiders.

The film focuses on a single village near a tributary of the Orinoco River. The villagers are attempting to make peace with an enemy village that they’ve been fighting for twenty years. To establish the peace, they’re planning to host a large feast for 200 guests that will last three days. The threat of warfare is a constant preoccupation for the Yanomami, and men are likely to fight two or three times a year. The Yanomami value hospitality and reciprocity, but part of the ideal of reciprocity is the notion that wrongs must be avenged; young children are taught that every injury suffered must be repaid, and they learn to develop extreme physical endurance in preparation for war.

In their spiritual life, the Yanomami believe that they are constantly at war with demons and evil forces. They rely upon ritualized drug use to invoke the power of the spirits, using an hallucinogenic drug that they obtain from the bark of a particular tree (one of 350 different species of plants that the Yanomami identify and use). Communication with the spirits, which is possible with the help of hallucinogenic drugs, is absolutely essential for the Yanomami, because they believe that all events in life, including every misfortune and disease, happen as a result of the activities of spirits. They believe that shamans can use their power to cure or to kill, and they believe that evil spirits are sent to harm them by enemy shamans. Warfare is a way to redress wrongs in the spirit world just as it is in the material world.

When a person dies, their belongings are burned, and it is taboo to ever mention their name again. The body is cremated, and the burnt bones are ground into a powder and mixed into a soup. Only people close to the dead person are allowed to consume the soup, so in essence the bodies of living relatives become the graves of the dead (the Yanomami believe that the souls of the dead would be unhappy if they didn’t find a resting place in the bodies of their relatives).

After extensive preparations, the guests arrive and spend several days feasting and exchanging gifts (which now place the guests in debt to their hosts, so that they will have to reciprocate the hospitality in the future). The feast features many ritual displays of aggression, valor, hospitality, and generosity, and in the end it is successful—the two former enemies form an alliance and make plans for a reciprocal feast.
FILM SYNOPSIS

The Art of Living

The second of the two films that accompany this unit is an episode from the Millennium series entitled The Art of Living.

The Art of Living focuses on the meaning and function of art in human life. The film explains that art and living are not separated in tribal cultures as they are in Western cultures. To illustrate that basic point, The Art of Living presents case studies of two African tribal cultures: the Wodaabe and the Dogon. The film concludes with a portrait of a Canadian artist who uses his art to express his understanding of the meaning of life and death. After watching the film, you should be able to answer these questions: How is the Wodaabe concept of beauty integrated with the people’s daily life? Why do the Wodaabe mean by their proverb which states that “you must go through the smoke to get to the fire”? How and why do the Dogon celebrate death? What does their funerary dance express for them? What does art mean for the Canadian artist portrayed in the film? Is he typical of the people in his culture?

In many tribal cultures, art is woven into the fabric of daily life through rituals, clothing, utilitarian objects. This film explores the way that two cultures, the Wodaabe people of Niger and the Dogon people of Mali, integrate beauty and ceremony into their daily activities. The film ends with a visit to a Canadian artist who discusses his way of connecting his art to his philosophy of life and death.
In the first segment, we meet the Wodaabe, nomadic pastoralists who live in a marginal environment on the fringes of the Sahara Desert, in a broad swath of arid grassland called the Sahel that cuts across much of north Africa. During the dry season, the Wodaabe live in widely dispersed family groups tending their flocks and herds, but during the rainy season, they all congregate in one spot for an annual festival called the Geerewol. It’s a time of plenty, with singing, dancing, and feasting, and everyone looks forward to it, especially the young, who regard the Geerewol as a wonderful opportunity for romance. The Wodaabe have a proverb that consoles them about the long time they have to spend wandering around the desert during the dry season before the Geerewol comes: “you must go through the smoke to get to the fire.”

At the Geerewol, we meet an attractive young woman who is “between the time of a girl and a wife,” which means that she is free to do whatever she pleases. She is chosen to judge the men’s dance at the Geerewol, because everyone says she is beautiful, and she is especially concerned that everything she does—how she bathes, how she dresses, how she moves—will be done gracefully and beautifully. That is the Wodaabe way, she says—grace and beauty in everything.

We see the young woman engaged in a flirtation with two young men over the course of a couple of days. Following the men’s dance at the Geerewol, she decides to spend the night with the men, and to make love to both of them. “Beauty in everything,” she says—and for her, she finds beauty in love and romance (it’s very important to her that all the elements of flirtation and lovemaking be carried out with grace and beauty). At the end of the Geerewol, she is disappointed that the festival is coming to an end, because that means she’s facing a long, lonely time in the bush again—but she says she’s happy, because she knows that after the time of the smoke there will be the time of the fire to come.

In the segment on the Dogon, we meet a man whose uncle has died, and we watch as the man is buried in a tomb hollowed out of the rock in the cliff high above the Dogon village. The Dogon don’t avoid thinking or talking about death, as people often do in Western cultures, because the Dogon believe that the knowledge and awareness of death makes life all the more precious. The Dogon think it’s important to celebrate both life and death, and they do so in a ritual called the Dance of the Masks (where men dance wearing long wooden masks that represent various characters important in the Dogon world and Dogon mythology).

In the final segment, we see a Canadian artist, a middle-aged man who makes his living by teaching painting classes, and who rejects most of the trappings of middle-class culture (including material possessions, creature comforts, and retirement plans). He dresses unusually and speaks in a manner that he frankly admits is affected; he also suffers health problems, including being HIV-positive, and he apparently lives alone—we see him buying cut flowers to put in his apartment so that he can have “something living” near him. In short, he’s different from most of the other people in his society, which is what we expect artists to be in Western cultures (in contrast to tribal societies, where people don’t recognize a contrast between art and everyday life, or between ordinary and artistic sensibilities).
SELECTED READING

Excerpt from

Ludic and Liminoid Aspects of Charter Yacht Tourism in the Caribbean

James Lett


Note: This article was published in a scholarly journal many years ago, and it reports some of the results of my ethnographic field research in the British Virgin Islands. Much has changed in the BVI in the years since then, especially for the natives of the islands, but the behavior of the charter yacht tourists has remained essentially unchanged to the present day. As the article explains, that behavior is very similar to the behavior of people in cultures throughout the world when they find themselves in “ludic and liminoid” contexts.

INTRODUCTION

In the British Virgin Islands, as in much of the “unspoiled” Caribbean, there are no casinos, night clubs, golf courses, or duty-free ports to lure tourists. Instead, tourists are enticed by the prospects of sun, sand, surf, and sex. Anthropologists have long known that many societies set aside special periods in which the customary rules and regulations of everyday life are temporarily inverted or suspended. Many forms of contemporary tourism in Western industrialized societies would seem to constitute analogous activities. This paper offers an anthropological interpretation of the meaning and significance that tourism holds for charter yacht tourists in the British Virgin Islands.

CHARTER YACHT TOURISM IN THE BRITISH VIRGIN ISLANDS

The British Virgin Islands (BVI), located sixty miles east of Puerto Rico, are part of the archipelago that includes the US Virgins, and exhibit a scenic splendor unsurpassed anywhere in the Caribbean. Many of the forty-odd islands and cays grouped around the Sir Francis Drake Channel are uninhabited (the two principal islands of Tortola and Virgin Gorda are home to 95% of the 11,000 inhabitants of the BVI). The panoramic vistas are unspoiled by high-rise hotels or other sprawling tourism developments. By fiat of the BVI government, the half-dozen or so luxury resort hotels scattered throughout the islands have been architecturally designed to blend into and complement the landscape. The climate is unvaryingly idyllic and the trade winds are dependably constant. In short, the tourist brochures are accurate: the British Virgin Islands are indeed a “yachting paradise.”
The BVI government has adopted a policy of emphasizing the environmental attractions of the archipelago in the development of the tourism industry. … It forbids development of many of the smaller uninhabited islands, out of fear that such development might detract from the natural beauty of the islands. The construction of a limited number of large but visually unobtrusive marinas has ensured that the local tourism industry will be “oriented to the sea.”

Recent developments in the BVI tourism industry have reflected the consequences of that policy. … Today there are well over 300 yachts-for-hire in the BVI. … Approximately 150,000 tourists visited the British Virgins in 1981; charter yacht tourists outnumbered hotel tourists by a 55 to 45 ratio.

There are over a dozen charter yacht companies in the British Virgin Islands. The yachts, which range from 30-foot sloops to 80-foot schooners, are rented either “crewed” or “bareboat” [but usually bareboat. … The rental rates vary with the size of the yacht and the season, but the typical price range is between $1,500 and $2,000 per week, excluding provisioning (food and fuel). Charter yacht tourists stay in the BVI, on the average, for slightly more than seven days. …

**LIMINOID ASPECTS OF CHARTER YACHT TOURISM**

“Liminoid,” in Victor Turner’s lexicon, refers to activities and experiences related to the liminal or transition stages of rites of passage. … Turner has coined the term *liminoid* to designate those activities that have liminal attributes but lack ritual associations. …

The qualities associated with liminality and liminoid activities include transition, homogeneity, equality, the absence of status distinctions, anonymity, uniform dress, sexual continence (or sexual excess), and *communitas* (Turner 1969:106). …

By whatever name, anthropologists have long recognized the existence of “liminoid” activities. As Norbeck (1971:51) has observed, “rites of reversal”—that is, temporarily recognized and sanctioned periods “during which the social hierarchy is inverted [and] customary rules of moral conduct are suspended”—are celebrated in many societies. …

Charter yacht tourism in the British Virgin Islands is replete with liminoid qualities [including] transition … homogeneity, equality, and the absence of status distinctions … communitas … anonymity and uniform dress … and sexual excess … The liminoid aspects of charter yacht tourism can be briefly summarized as follows…

*Transition*

The “vacation” enjoyed by the charter yacht tourists is a temporary interlude in the tourists’ lives. … The tourists have removed themselves both physically and symbolically from their normal, structured world, but they have done so with the definite intention of returning to that world—the intervening period is recognized as a transitory one. All play incorporates this quality of “extra-ordinariness,” but liminoid varieties of play add a quality of “reversal” to the separation from the ordinary realm…
Homogeneity, Equality, and the Absence of Status Distinctions

Charter yacht tourists rarely make reference to their social or occupational statuses at home. They typically introduce themselves to their fellow tourists by their first names only. The charter yacht tourists have left behind most of the possessions that they customarily use to indicate their social and economic status...

Status distinctions, in fact, would be inimical to the charter yacht tourists, who share a sense of “being apart together in an exceptional situation.” The distinctions that matter and that are addressed are not among the charter yacht tourists themselves but between the charter yacht tourists and the rest of the world of “non-players,” or those who lack liminoid status...

Communitas

The bonds of communitas are direct, personal, immediate, and unmediated, and so too are the bonds of friendship among charter yacht tourists. The charter yacht tourists exhibit none of the reluctance to approach and greet strangers that is commonly associated with middle-class U.S. society. Instead, charter yacht tourists are unguarded, open, and even aggressively friendly toward one another. … Charter yacht tourists can be frequently observed snorkeling, swimming, sunning, or barbecuing in groups of ten to twelve—groups that represent two or three yachts whose crews, until a few hours before, were strangers to one another.

Anonymity and Uniform Dress

The lack of status distinctions and the nearly exclusive use of first names constitutes a kind of anonymity which blurs the social personalities of the charter yacht tourists. … The anonymity of the charter yacht tourists is further enhanced by their uniformity of dress. Bathing suits are the most practical costume for the great majority of activities pursued by the charter yacht tourists, and, accordingly, most of the charter yacht tourists are dressed in bathing suits for much of the time they are in the British Virgin Islands…

Even when not dressed in bathing suits, there is still a discernible uniformity to the tourists’ attire. Charter yacht tourists who come ashore in the evenings to visit the local pubs or to dine in the hotel restaurants are usually dressed in “resort” fashions. Both men and women favor colorful and sexually suggestive outfits for such occasions…

Sexual Excess

Charter yacht tourists in the British Virgin Islands place considerable emphasis upon sexuality. Sexual activity is a ubiquitous theme of conversation among the tourists, even though, or perhaps especially because, explicit, detailed discussion of sexual topics might be considered inappropriate in their everyday social environments [at home]. Lewd, ribald, and profane jokes are particularly popular, while sexual innuendo is a common feature of all but the most mundane and utilitarian communication. (Being on vacation, the charter yacht tourists have little need or opportunity to
engage in strictly utilitarian conversations. Charter yacht tourists can be very imaginative even in those instances, however, and a simple request to have a yacht’s fuel tank filled by a gasoline hose can be charged with sexual implications, much to the amusement of the yacht’s crew.) The charter yacht tourists contribute substantially to the support of a thriving souvenir T-shirt business in both the U.S. and the British Virgin Islands. Particularly prized by the charter yacht tourists are T-shirts decorated with such slogans as “The BVI: So Many Women, So Little Time,” “Only Sailors Get Blown Offshore,” “Birthdays Come But Once A Year—Aren’t You Glad You’re Not A Birthday,” and “No Friggin’ in the Riggin.”

But the charter yacht tourists do more than talk and read about sex. Many of the tourists take advantage of the numerous secluded coves in the British Virgin Islands to sunbathe in the nude, despite the government’s warning that “nudity is an offence punishable by law.” It is difficult to enforce the law, though, and nudity is not uncommon on many of the less secluded beaches as well, particularly on Virgin Gorda.

Nor are sexual relations among charter yacht tourists uncommon—that is, charter yacht tourists who meet one another for the first time in the British Virgin Islands. The state of communitas not only encourages many charter yacht tourists to solicit the companionship of strangers for snorkeling, swimming, and sunning, but it also encourages them to seek sexual partners among other charter yacht tourists. While it is probable that only a minority of the tourists actually engage in “sex with strangers,” the idea of such behavior is part of the collective fantasy of an adventurous vacation shared by the majority of charter yacht tourists.
This article is the longest and most complex of any of the Selected Readings in this Study Guide, and most students are likely to find it to be the most challenging and thought-provoking. As a result, it should be read very carefully. The anthropological study of religion is premised on the assumption that the supernatural realm is an illusion created by human beings to fulfill human needs; this article explains in detail how anthropologists know that assumption to be indisputably correct.

The anthropological literature on religion is diverse and voluminous, but there is one common perspective that pervades virtually that entire body of work, and that is the conviction that the epistemological principles of the scientific method cannot and/or should not be applied to the content of religious beliefs, on the grounds that nonempirical phenomena are necessarily beyond the purview of empirical science. Evans-Pritchard offers a familiar formulation of the position in Theories of Primitive Religion:

He [the anthropologist] is not concerned, qua anthropologist, with the truth or falsity of religious thought. As I understand the matter there is no possibility of his knowing whether the spiritual beings of primitive religions or of any others have any existence or not, and since that is the case he cannot take the question into consideration (Evans-Pritchard 1965:17).

Whatever personal convictions anthropologists may hold as individuals, the overwhelming majority have agreed with Evans-Pritchard that, as anthropologists, they either cannot or should not investigate the truth or falsity of religious beliefs. In virtually every major anthropological work on religion, and in most if not all introductory textbooks in cultural anthropology, the question of the truth or falsity of
religious beliefs is evaded, ignored, or de-emphasized in favor of questions concerning the social, psychological, ecological, symbolic, aesthetic, and/or ethical functions and dimensions of religion.¹

Thus, for example, Anthony Wallace, who affirms that religion “is based on supernaturalistic beliefs about the nature of the world which are not only inconsistent with scientific knowledge but also difficult to relate even to naive human experience” (Wallace 1966:v), nevertheless chooses to “ignore the extremes of fundamentalist piety and anticlerical iconoclasm” and to regard religion as “neither a path of truth nor a thicket of superstition, but simply [as] a kind of human behavior...which can be classified as belief and ritual concerned with supernatural beings, powers, and forces” (Wallace 1966:5). Similarly, Edward Norbeck, who recognizes that “religious beliefs and acts are created by man on the basis of his life” (Norbeck 1974:7), nevertheless explicitly restricts the anthropological study of religious beliefs to “interpretations of their role in human life and of the factors that have molded the customs into their particular forms” (Norbeck 1974:3). Clifford Geertz (1973:89), who defines religion as a system of “sacred symbols” which functions “to synthesize a people’s ethos...and their world view,” is completely unconcerned with the question of whether any particular religiously-supported world view is true or false. And Marvin Harris, who has long been one of anthropology’s most persistent critics of irrational modes of thought, nevertheless declares that he “can readily subscribe to the popular belief that science and religion need not conflict,” since science, he argues, “does not dispute the doctrines of revealed religions as long as they are not used to cast doubt on the authenticity of the knowledge science itself has achieved” (Harris 1979:6).

In short, a common element of the anthropological perspective on religion can be summarized in a simple syllogism:

1. The essential defining feature of science is empiricism (i.e., the belief that the only reality which exists is the reality amenable to the five senses, implying that reliable knowledge of that reality can be obtained only through the five senses).

2. The essential defining feature of religion is supernaturalism (i.e., the belief that there is a reality which lies beyond or somehow transcends the reality amenable to the five senses, implying that reliable knowledge of that reality can be obtained by means other than the five senses).

3. Therefore, science cannot be used to determine whether religious beliefs are true or false, since empirical epistemological procedures cannot be applied to supernatural phenomena.

Despite its virtual ubiquity in anthropology, that argument is unsound, for the simple reason that both of its
The essential defining feature of science is *not* empiricism, and the essential defining feature of religion is *not* supernaturalism. The conclusion that religion is or should be immune from scientific scrutiny is thus wholly unwarranted; moreover, that conclusion is also ethically objectionable. Considerations of disciplinary integrity, public welfare, and human dignity demand that religious claims be subjected to anthropological evaluation.

My position, then, is that anthropological science can and should be applied to the content of religious beliefs. My goal here is to establish three points: first, that rationality rather than empiricism is the key element of science; second, that irrationality rather than supernaturalism is the key element of religion; and third, that anthropologists have an intellectual and ethical obligation to investigate the truth or falsity of religious beliefs. The first point concerns the nature of science; the second involves the nature of religion; and the third, obviously, is a question of value.

The Nature of Science

In the most fundamental sense, science can be defined as a systematic and self-correcting method for acquiring reliable factual knowledge. “It is the desire for explanations which are at once systematic and controllable by factual evidence that generates science,” the philosopher Ernest Nagel (1961:4) observes, “and it is the organization and classification of knowledge on the basis of explanatory principles that is the distinctive goal of the sciences.” The rules of the scientific method (which include testability, observer-independence, replicability, and logical consistency) do not restrict science to the pursuit of *empirical* knowledge, however. Instead, they restrict science to the pursuit of *propositional* knowledge.

A proposition is an assertion of fact, a statement which makes a claim that is either true or false depending on the evidence. The scientific method is simply a set of procedures for evaluating the evidence offered in support of any proposition. No proposition is ever rejected by science on an *a priori* basis (unless the proposition is self-contradictory); science is predicated upon the assumption that *any* factual assertion *could* be true. Nor does science demand that the evidence offered in support of any claim be *empirical*; science demands only that the evidence be *objective*.

As a set of guidelines for the acquisition of knowledge, scientific objectivity implies two things: first, that the truth or falsity of a given factual claim is independent of the claimant’s hopes, fears, desires, or goals; and second, that no two conflicting accounts of a given phenomenon can both be correct (Cunningham 1973:4). Critics of the scientific method commonly protest that objectivity in the first sense is unrealistic, because no individual scientist can ever be completely unbiased, and that objectivity in the second sense is unrealizable, because absolute certainty is unattainable. Both of those subordinate premises are correct (it is true that no individual can ever be completely unbiased, and it is true that absolute certainty about evidential
questions can never be achieved) but neither of these points is relevant to the claim that science is objective, as Charles Frankel (1955:138-139) explains:

There are two principal reasons why scientific ideas are objective, and neither has anything to do with the personal merits or social status of individual scientists. The first is that these ideas are the result of a cooperative process in which the individual has to submit his results to the test of public observations which others can perform. The second is that these ideas are the result of a process in which no ideas or assumptions are regarded as sacrosanct, and all inherited ideas are subject to the continuing correction of experience.

To be objective, then, in the scientific sense of the term, a statement must fulfill two criteria: first, it must be publicly verifiable, and second, it must be testable. In the words of the philosopher Carl Hempel (1965:534), an “objective” statement is one that is “capable of test by reference to publicly ascertainable evidence.” The scientific claim to objectivity is thus not a dogmatically positivistic claim to absolute certainty.² Scientific objectivity does not deny that perception is a process of active interpretation rather than passive reception, nor does it deny that the acquisition of reliable knowledge is a highly problematic undertaking. Instead, scientific objectivity merely denies that all claims to knowledge are equally valid, and it provides a set of standards by which to evaluate competing claims. To assert that science is objective, as Siegel (1987:161) does, is to assert simply that all claims to knowledge should be “assessed in accordance with presently accepted criteria (e.g. of evidential warrant, explanatory power, perceptual reliability, etc.), which can in turn be critically assessed.”

As a technique for acquiring reliable propositional knowledge, science necessarily demands objective evidence, which is to say evidence that is both publicly verifiable and testable. Evidence that was not publicly verifiable would not be reliable, and evidence that was not testable would not be propositional (since a proposition is, by definition, a statement that can be tested against the evidence). Objectivity, however, is all that science demands. As long as a propositional claim is both publicly verifiable and testable, it is scientific. There is nothing in the essential defining features of science which says that propositional claims must necessarily be empirical.

In practice, it is true, science has so far been restricted exclusively to empirical data and empirical data-collection procedures, but that restriction is neither prejudicial nor arbitrary. Instead, it is a result of the fact that the empirical approach is the only approach to propositional knowledge that has ever passed the test of public verifiability. If publicly verifiable evidence of non-empirical reality were presented, the recognition of such reality would be incorporated into the scientific world view. If non-empirical data collection
procedures (e.g., faith, revelation, intuition) were publicly verifiable, they would be incorporated into the scientific method (Lett 1987:18-22). It is not the fact that science is empirical that makes science objective; instead, it is the fact that science is objective that makes science empirical.

Thus it is a mistake (although a common one\(^3\)) to define science in terms of empiricism, as Bernard (1988:12) does when he says that the scientific method is based on the assumption that “material explanations for observable phenomena are always sufficient, and that meta-physical explanations are never needed.” Science, however, does not assume that material explanations are always sufficient; instead, science concludes, as an inductive generalization, that material explanations are always sufficient. (Further, under the epistemological principles of science, that conclusion would be subject to revision in the light of new evidence.) Bernard (1988:11-12) offers a better definition of science when he quotes Lastrucci (1963:6) to the effect that science is “an objective, logical, and systematic method of analysis of phenomena, devised to permit the accumulation of reliable knowledge.” The term “empirical” is appropriately missing from that definition.

“Scientific knowledge,” then, means “objective knowledge,” which means propositional knowledge that is both publicly verifiable and testable. In order to ensure the public verifiability of propositional claims, science relies upon the provisionally necessary rule of empiricism (while recognizing that empiricism is only a convenient means to an end--namely intersubjectivity--and leaving open the possibility that some as-yet-unidentified non-empirical approach might satisfy the criterion of public verifiability). In order to ensure the testability of propositional claims, science relies upon the logically necessary rule of falsifiability, Karl Popper’s (1959) indisputable sine qua non of the scientific approach to knowledge.

According to the rule of falsifiability, a claim or statement is to be considered propositional if and only if it is possible to conceive of evidence that would prove the claim false. The rule of falsifiability is simply a means of distinguishing propositional claims from non-propositional ones. If the claim were to fail the test of falsifiability (if it were not possible, in other words, to even imagine falsifying evidence) then all possible evidence would be irrelevant, and the claim would be propositionally meaningless (it might, of course, be emotively meaningful, but it would be entirely devoid of any factual content whatsoever). If the claim were to pass the test of falsifiability, on the other hand (if it were possible to conceive of data that would disprove the assertion) then the evidence would be relevant, the claim would be propositionally meaningful, and the truth or falsity of the proposition could be tested against the evidence (in which case, of course, science would demand that the evidence be publicly verifiable).

The rule of falsifiability is the single most important rule of science. It is the one standard that guarantees that all genuine scientific statements are propositional (rather than emotive or
tautological or nonsensical), and it is the salient feature that sharply distinguishes science from other ways of knowing. It is, further, the one standard by which all scientific explanations are judged, as Cohen (1970:32) correctly observes: “Whether or not the theory is scientific depends ultimately on whether the ideas involved in the theory can be submitted to a test of their validity.”

Thus science is a technique for acquiring propositional knowledge that relies exclusively upon the publicly verifiable investigation of falsifiable claims, whatever those claims might be. In the insightful words of Richard Watson (1991:276), “science in the most general sense is an attempt to learn as much as possible about the world in as many ways as possible with the sole restriction that what is claimed as knowledge be both testable and attainable by everyone” (emphasis added). There is then no reason not to apply science to nonempirical claims. If the claim were a factual one, then it would be falsifiable, whatever the nature of its supporting evidence, and it would be the claimant’s responsibility to identify reliable (i.e., publicly verifiable) evidence that would falsify the claim. As Lakatos (1970:92) insists, “intellectual honesty consists...in specifying precisely the conditions under which one is willing to give up one’s position.”

Those who see empiricism as the defining element of science fail to recognize that the scientific method is a combination of both deduction and induction. Science, in other words, relies upon both logic and experience, both reason and observation, in the pursuit of knowledge. It would in fact be prejudicial to call science empirical; science demands only that the evidence collected through observation and experience be objective (i.e., publicly verifiable and testable), and it is at least logically possible that nonempirical evidence could be objective.

In sum, the essence of science lies in the exclusive commitment to rational beliefs, by which I mean beliefs that are both falsifiable and unfalsified. If a belief satisfies both criteria (if it is, in the first place, propositional, and it has, in the second place, survived unrelenting attempts at falsification in the light of publicly verifiable evidence), then it deserves to be called scientific knowledge. Scientific knowledge is thus provisional knowledge (it is always logically possible that evidence could be uncovered tomorrow that would falsify a previously unfalsified claim), but the scientific approach to propositional knowledge is nevertheless the only rational approach. It would obviously be irrational to give factual credence to a purportedly propositional claim that was either nonfalsifiable (i.e., propositionally meaningless) or falsified (i.e., evidentially wrong). That brings us to religion.

The Nature of Religion

In Religion in Human Life, Edward Norbeck (1974:6) observes that “religion is characteristically seen by anthropologists as a distinctive symbolic expression of human life that interprets man himself and his universe, providing motives for human action, and also a group of associated acts which have survival value for the human species.”
Various formulations could be subsumed under that general description, such as Lessa and Vogt’s (1972:1) notion that “religion may be described as a system of beliefs and practices directed toward the ‘ultimate concern’ of a society,” or Geertz’s (1973:90) concept of religion as “a system of symbols” that integrates a culture’s world view and ethos. Those definitions, however, could logically embrace existentialism, communism, secular humanism, or other philosophies which most anthropologists would be reluctant to call religion. How then is religion distinguished from comparable sets of beliefs and behaviors that fulfill similar functions?

As Norbeck (1974:6) explains, “the distinguishing trait commonly used is supernaturalism, ideas and acts centered on views of supernatural power.” The concept of the supernatural has been firmly tied to the anthropological definition of religion since the origins of the discipline. Edward Tylor (1958:8), for example, argued that “it seems best...to claim, as a minimum definition of Religion, the belief in Spiritual Beings.” Frazer (1963:58) maintained that “religion involves, first, a belief in superhuman beings who rule the world, and, second, an attempt to win their favour.” Malinowski (1954:17) observed that sacred “acts and observances are always associated with beliefs in supernatural forces, especially those of magic, or with ideas about beings, spirits, ghosts, dead ancestors, or gods.” The concept of the supernatural continues to dominate anthropological conceptions of religion today. Marvin Harris (1989:399), for example, declares that “the basis of all that is distinctly religious in human thought is animism, the belief that humans share the world with a population of extraordinary, extracorporeal, and mostly invisible beings.”

There is a fundamental problem with the term “supernatural,” however: it is so varyingly conceived in the different cultures of the world that it lacks a common, unambiguous definition. The Yanomamo, Roman Catholic, ‘Kung San, and Buddhist conceptions of the “supernatural” realm, for example, are widely divergent and even contradictory in some aspects. The problem is that the term “supernatural” is an emic concept, meaning that it is defined in terms of the categories and concepts regarded as meaningful and appropriate by the members of particular cultures; it is not an etic concept, one defined in terms of the categories and concepts regarded as meaningful and appropriate by the community of scientific observers (Lett 1990). As an emic concept, the term “supernatural” has as many definitions as there are cultures; as an etic concept, it has no recognized, agreed-upon definition.

Nor could any such objective, scientific definition be offered for the term “supernatural,” for the simple reason that the word is propositionally meaningless. The term “supernatural” is purportedly used to designate a reality that somehow transcends the natural universe of empirical reality, but what does it mean to “transcend empirical reality?” If such a thing as “nonempirical reality” exists, how could we, as empirical beings, even know about it? (Revelation and intuition, after all, are demonstrably unreliable—witness
the mutually exclusive claims to knowledge made by different people on revelatory grounds.) If such a thing as “nonempirical reality” exists, by what mechanism is it connected to empirical reality? (How, in other words, do supernatural beings and forces have an impact on the natural world?) Further, if such a thing as “nonempirical reality” exists, why is there not a single shred of objective evidence to indicate its existence? As the physicist Victor Stenger (1990:33) points out, there is no rational reason whatsoever to even hypothesize the existence of the “supernatural:”

At this writing, neither the data gathered by our external senses, the instruments we have built to enhance those senses, nor our innermost thoughts require that we introduce a nonmaterial component to the universe. No human experience, measurement, or observation forces us to adopt fundamental hypotheses or explanatory principles beyond those of the Standard Model of physics and the chance processes of evolution.

The term “supernatural” thus purports to describe a reality that we could not know or recognize, one that could not have any impact on the reality we do know and recognize, and one for which we have no evidence whatsoever; it is, in short, unintelligible. The philosopher William Gray (1991:39) eschews the term “supernatural” and suggests instead that religious statements can be described as “metaphysical,” by which he means statements that refer to facts that could not possibly be observed. But what would an “unobservable fact” be? To substitute “metaphysical” for “supernatural” is simply to play a semantic game. Terms such as “supernatural,” “metaphysical,” and “nonempirical reality” are, in fact, oxymorons. It would make just as much sense to talk about the “unreal real.”

Connotatively, the term “supernatural” presents additional problems: it is not sufficiently comprehensive to embrace beliefs and behaviors that are virtually identical in form and function to so-called “religious” beliefs and behaviors, but which would not commonly be called “supernatural.” Gods, demons, angels, and souls, for example, could easily be called “supernatural,” and so too, perhaps, could incubi, succubi, ghosts, goblins, fairies, sprites, trolls, and leprechauns. But what about witches, clairvoyants, telepathists, psychokinetics, extraterrestrials, psychic surgeons, vampires, werewolves, spirit channelers, firewalkers, astrologers, the Loch Ness Monster, and Sasquatch? Would those too be called “supernatural?” Would anthropologists call beliefs in such beings and forces “religious?”

At least one recent anthropological text on religion recognizes this problem. In *Magic, Witchcraft, and Religion*, Lehmann and Myers (1989:3) argue that it is time for anthropologists to abandon the restrictive connotations of the term “supernatural:”

Expanding the definition of religion beyond
spiritual and superhuman beings to include the extraordinary, the mysterious, and unexplainable allows a more comprehensive view of religious behaviors among the peoples of the world and permits the anthropological investigation of phenomena such as magic, sorcery, curses, and other practices that hold meaning for both pre-literate and literate societies.

Lehmann and Myers fail, however, to suggest an alternative term to replace the word “supernatural.” Fortunately, there is an obvious alternative available, one that is winning increasing acceptance both inside and outside anthropology, namely the word “paranormal.” The term refers ostensibly to phenomena that lie beyond the normal range of human perception and experience, although in practice it does not denote simply anomalous phenomena. Instead, it describes putative phenomena whose existence would in fact violate the rules of reality revealed by science and common sense. From an etic point of view, therefore, the notion of the “paranormal,” like the notion of the “supernatural,” is propositionally meaningless. Unlike the term “supernatural,” however, the term “paranormal” is not restrictive in its connotations, and that is its principal advantage. “Paranormal” is a useful umbrella label for the complete set of emic beliefs concerning the unreal real. The term embraces the entire range of transcendental beliefs, covering at once everything that would otherwise be called magical, religious, supernatural, metaphysical, occult, or parapsychological.

Therein lies the real common denominator in all paranormal beliefs: not that they are all “supernatural,” but that they are all irrational, by which I mean that every single paranormal belief in the world, whether labeled “religious,” “magical,” “spiritual,” “metaphysical,” “occult,” or “parapsychological,” is either nonfalsifiable or has been falsified (The vast majority of all paranormal propositions—such as the Judeo-Christian proposition that “God” exists—are nonfalsifiable and hence propositionally meaningless; a smaller percentage—such as the Judeo-Christian proposition that a universal flood covered the earth sometime within the past 10,000 years—are falsifiable but have invariably been falsified by objective evidence.)

The simple fact of the matter is that every religious belief in every culture in the world is demonstrably untrue. Regardless of whether the religious practices are organized communally or ecclesiastically, regardless of whether they are mediated by shamans or priests, regardless of whether the intent is manipulative or supplicative, the one constant that runs through all religious practices all over the world is that all such practices are founded upon nonfalsifiable or falsified beliefs concerning the paranormal.

Irrationality is thus the defining element in religion. Religion and science are not at odds because religion wants to be “supernatural” while science wants to be “empirical;”
instead, religion and science are at odds because religion wants to be irrational (relying ultimately upon beliefs that are either nonfalsifiable or falsified), while science wants to be rational (relying exclusively upon beliefs that are both falsifiable and unfalsified).

I am aware that many anthropologists are likely to react negatively to the pejorative connotations of the word “irrational.” The term, however, is simply descriptive and therefore entirely appropriate. It is unarguably irrational to maintain a belief in an allegedly propositional claim when that claim is either propositionally meaningless or has been decisively repudiated by objective evidence. Whether it is laudable or forgivable to do so is another question: it is not, of course, a factual question, but neither is it a question that scientists can entirely avoid.

A Question of Value

It seems to me that the obligation to expose religious beliefs as nonsensical is an ethical one incumbent upon every anthropological scientist, for the simple reason that the essential ethos of science lies in an unwavering dedication to truth. As Frankel and Trend (1991:182) put it, “the basic demand of science is that we seek and tell the honest truth, insofar as we know it, without fear or favor.” In the pursuit of scientific knowledge, the evidence is the only thing that matters. Emotional, aesthetic, or political considerations are never germane to the truth or falsity of any propositional claim. (There are moons around Jupiter, just as Galileo claimed, even though the Catholic Church and most Christians at the time did not like him for saying it.) In science, there is no room for compromise in the commitment to candor. Scientists cannot allow themselves to be propagandists or apologists touting convenient or comforting myths.

It is not simply our desires for intellectual honesty and disciplinary integrity that compel us to face the truth about religious beliefs; as anthropologists, we are specifically enjoined to do so by our code of ethics. According to the Revised Principles of Professional Responsibility adopted by the American Anthropological Association in 1990, anthropologists have an explicit obligation “to contribute to the formation of informational grounds upon which public policy may be founded” (Fluehr-Lobban 1991:276). When anthropologists fail to publicly proclaim the falsity of religious beliefs, they fail to live up to their ethical responsibilities in this regard. In a debate concerning public policy on population control, for example, anthropologists have an ethical obligation to explain that God does not disapprove of the use of contraceptives because there is no such thing as God.

We also have an obligation not to pick and choose which truths we are willing to tell publicly. I think, for example, that the political threat from the oxymoronic “scientific creationists” would be better met if anthropologists were to debunk the entire range of creationist claims (including the belief that God exists as well as the belief that humans and dinosaurs were contemporaneous); otherwise the creationists will continue to criticize us, with considerable justification, for our
arbitrariness and inconsistency in choosing which paranormal claims we will accept or tolerate and which we will attack (see Toumey 1994).

I am convinced that our collective failure to stake out a firm anthropological position on paranormal phenomena has compromised our intellectual integrity, weakened our public credibility, and hampered our political effectiveness. Carlos Castaneda was able to use his anthropological credentials to buttress the credibility (and the sales) of his paranormal fantasies, partly because, as far as the general public knew, the discipline of anthropology accepted the reality of hundred-foot gnats and astral projection (de Mille 1990). While it is true that most individual anthropologists rejected Castaneda’s paranormal claims, few did so publicly or effectively (Murray 1990).

In fact, our discipline as a whole has a lamentable record when it comes to public responses to paranormal claims. There have been notable exceptions in archeology and biological anthropology, where a number of scholars have responded forcefully and well to the ancient astronaut and creationist myths (e.g., White 1974; Cole 1978; Rathje 1978; Cazeau and Scott 1979; Godfrey 1983; Stiebing 1984; Cole and Godfrey 1985; Harold and Eve 1987; Feder 1980, 1984, 1990), but cultural anthropologists have been remarkably remiss in responding to the myriad paranormal claims that fall within their domain (see Lett 1991).

Margaret Mead, for example, maintained a lifelong interest in paranormal phenomena and was an ardent champion of irrational beliefs (Gardner 1988). She was apparently persuaded that “some individuals have capacities for certain kinds of communications which we label telepathy and clairvoyance” (Mead 1977:48), even though the most casual scholarship would have revealed that that proposition has been decisively falsified (the evidence comes from more than a century of intensive research that has been thoroughly documented and widely disseminated--see Kurtz 1985; Druckman and Swets 1988; Hansel 1989; Alcock 1990). In 1969, Mead was influential in persuading the American Association for the Advancement of Science to accept the habitually pseudoscientific Para-psychological Association as a constituent member. In all of this, Mead used her considerable talents for popularization to promulgate nonsensical beliefs among the general public. However sincere and well-intentioned, her efforts were irresponsible, unprofessional, and unethical; worse still, they were not atypical of cultural anthropology.6

Even those anthropologists who do not share Mead’s gullibility have been notably reluctant to confront the truth about paranormal beliefs. Anthony Wallace, for example, in all likelihood thought he was being purely objective when he decided to avoid the “extremes of piety and iconoclasm” and to regard religion as “neither a path of truth nor a thicket of superstition” (Wallace 1966:5). In science, however, being objective does not entail being fair to everyone involved; instead, being objective entails being fair to the truth. The simple truth of the matter is that religion is a thicket of superstition, and if
we have an ethical obligation to tell the truth, we have an ethical obligation to say so.

I find Wallace’s equivocation on the truth or falsity of religious beliefs to be particularly regrettable, because his *Religion: An Anthropological View* is one of the justly celebrated classics in the anthropology of religion. Wallace, of course, would not agree that his stance is anything less than fair and appropriate; indeed, he is very forthright in declaring and defending his value position. In the opening pages of his book, for example, he states that “although my own confidence has been given to science rather than to religion, I retain a sympathetic respect and even admiration for religious people and religious behavior” (Wallace 1966:vi).

I suspect that most anthropologists would be inclined to agree with Wallace. Eric Gans (1990:1), who has urged anthropologists to “demonstrate a far greater concern and respect for the form and content of religious experience,” is one who clearly shares Wallace’s sympathy for the religious temperament. Whether Wallace and Gans are justified in according religious people respect and admiration is a debatable question, however. No reasonable person would deny that religious people are entitled to their convictions, but an important distinction must be made between an individual’s right to his or her own opinion (which is always inalienable) and the rightness of that opinion (which is never unchallengeable). With that in mind, it could be argued that individuals who are led by ignorance or timidity to embrace incorrect opinions might deserve empathy and compassion, but they would hardly deserve respect and admiration. Respect and admiration, instead, should be reserved for individuals who exhibit dignity, courage, or nobility in response to the universal challenges of human life.

The philosopher Paul Kurtz (1983) articulates just such a position in a lengthy rebuttal to religious values entitled *In Defense of Secular Humanism*. From Kurtz’s point of view, religious people live in a world of illusion, unwilling to accept and face reality as it is. In order to maintain their beliefs, they must prostitute their intellectual integrity, denying the abundant contradictory evidence that constantly surrounds them. They exhibit an “immature and unhealthy attitude” that is “out of touch with cognitive reality” and that “has all the hallmarks of pathology” (Kurtz 1983:173). Religious people fail to exhibit the moral courage that is the foundation of a responsible approach to life.

The physicist Victor Stenger (1990) shares Kurtz’s disdain for religious commitment, and he is one of many skeptical rationalists in a variety of fields who do so. Religious people, Stenger argues, fail to accept responsibility for defining the meaning and conduct of their own lives; instead, they lazily and thoughtlessly embrace an inherited set of illogical wish-fulfillment fantasies. By refusing to fully utilize their quintessentially human attributes—the abilities to think, to wonder, to discover, to learn—religious people deny themselves the possibility of human dignity or nobility. It is only those with the courage to reject religious
commitment, Stenger (1990:31-32) suggests, who deserve admiration; in his words, “those who have no need to deny the reality they see with their own eyes willingly trade an eternity of slavery to supernatural forces for a lifetime of freedom to think, to create, to be themselves.”

It would be disingenuous of me not to admit that I concur completely with Kurtz and Stenger. Nevertheless, my personal values regarding religion are entirely beside the point; I mention this only to point out the irony of our discipline’s frequent sympathy for religious commitment. In Western culture, the concept of religious “faith” has a generally positive connotation, but there is nothing positive about the reality masked by that obfuscatory term. “Faith” is nothing more than the willingness to reach an unreasonable conclusion—i.e., a conclusion that either lacks confirming evidence or one that contains disconfirming evidence. Willful ignorance, deliberate self-deception, and delusional thinking are not admirable human attributes. Religion prejudicially regards faith as an exceptional virtue, but science properly recognizes it as a dangerous vice.

In the final analysis, however, it is irrelevant whether religious conviction deserves respect and admiration, as Wallace and Gans propose, or contempt and disdain, as I believe. My point instead is a very basic one: as scientists, we all have an ethical obligation to tell the truth, regardless of whether that truth is attractive or unattractive, diplomatic or undiplomatic, polite or impolite. As anthropologists, we have not been telling the truth about religion, and we should. The issue is just that simple.

Conclusion

As a diverse, multifunctional cultural universal, religion is unavoidably a phenomenon of surpassing anthropological interest. What the anthropology of religion has long ignored, however, is the fact that religion and anthropology are competitors in the attempt to fulfill many of the same functions. Much of the domain of inquiry that anthropology has recently claimed for itself is one that religion has long considered its own, including the fundamental questions of human origins, human nature, and human destiny. Elman Service (1985:319) makes this point very tellingly in *A Century of Controversy*:

People, in the union of society, already know the answers to all of the questions they consider basic...Unlike the natural sciences, which at first were called on simply to fill the dark void of ignorance with increasingly sure, or testable, knowledge (and which were likely to be the ones asking the question), the behavioral sciences faced questions that had already been asked and answered by the culture itself.

The conflict between religion and anthropology comes about because the answers that the two offer to the “basic questions” concerning humanity are in most cases fundamentally opposed. Religious and scientific perspectives on such questions are rarely
complementary, as it is popularly supposed. More often, religious and scientific perspectives are mutually contradictory and ultimately incompatible. Anthropological science reveals, in addition, that the contradictory answers offered by religion are clearly, demonstrably, and unequivocally wrong. When it comes to the questions of human origins and human nature, for example, it is evident that the world’s religions are mistaken. Consider the Judeo-Christian tradition as a single instance: the human species is not less than 10,000 years old, the present geographical distribution of human populations is not attributable to survivor dispersion following a universal flood, the origins of Homo sapiens are not distinct from the rest of the animal kingdom, the linguistic diversity of the human species is not the result of an historic event in southwest Asia 4,000 years ago, illness is not caused by the Devil, and women are not intellectually inferior to men.

In my view, the goal of anthropology should be to give us the right answers to the questions that human beings have always asked. The exceptional value of our discipline does not lie in our subject matter, which is neither unique nor original. Instead, it is the anthropological approach (specifically, the scientific perspective) which makes our discipline worthwhile. No rational person can doubt the unequaled value of scientific investigation. “Since the eighteenth century,” as Bernard (1988:25) aptly observes, “every phenomenon, including human thought and behavior, to which the scientific method has been systematically applied over a sustained period of time, by a large number of researchers, has yielded its secrets, and the knowledge has been turned into more effective human control of events.”

The unfortunate truth is, however, that the scientific study of human thought and behavior has lagged behind the scientific study of the natural world, in part because social scientists, out of deference to the emotional sensitivities of their fellow humans, have been especially reticent about applying the scientific method to the entire range of anthropological phenomena. The study of religion is only the most obvious instance of that reticence. If we would like to achieve something comparable to the success that our colleagues in physics, chemistry, and biology have achieved, we will have to be equally consistent in our application of the scientific method.

To summarize briefly, we know that no religious belief is true, because we know that all religious beliefs are either nonfalsifiable or falsified. In the interests of scientific integrity, we have an obligation to declare that knowledge. Doing so, of course, would not preclude other anthropological analyses of religion, and I would not want to be understood as having suggested that we should abandon the study of the social, psychological, ecological, symbolic, aesthetic, and ethical functions and dimensions of religion. It is precisely those areas where the anthropology of religion has made and continues to make its greatest contributions. Nevertheless, the scientific study of religion will never be fully legitimate until scientists recognize and proclaim the reality of religion.
Notes

1 There have been exceptions, of course. Murdock (1980:54), for example, makes this unambiguous observation: “There are no such things as souls, or demons, and such mental constructs as Jehovah are as fictitious as those of Superman or Santa Claus.” Similarly, Schneider (1965:85) offers this forthright declaration: “There is no supernatural. Ghosts do not exist.” But these are the exceptions that prove the rule.

2 Scientific objectivity is, admittedly, founded upon a pair of ultimately unprovable assumptions: first, the assumption that “reality is ‘out there’ to be discovered,” as Bernard (1988:12) says (or that “there are things outside of the observer which no amount of merely logical manipulation can create or destroy,” as Harris [1964:169] puts it), and second, the assumption that reality is amenable to human inquiry (or that reliable knowledge is attainable, in other words). However, while it may not be possible to conclusively prove the truth of either assumption, neither is it possible to reasonably doubt the validity of either. Both assumptions are decisively validated by the overwhelming weight of human experience. Our lives are not mere illusions, and we have succeeded in understanding and predicting much of the world. To deny the first assumption is to engage in the worst sort of solipsism; “it is quite true that facts do not speak for themselves,” as Spaulding (1988:264) astutely observes, “but a conclusion that therefore there are no facts is a crashing non sequitur.” To deny the second assumption is to claim to know that no knowledge is possible, and that, obviously, is self-contradictory.

3 It is a mistake that I myself have made. In the first edition of my textbook on anthropological theory (Lett 1987:26), I suggested that science could be defined as “a systematic method of inquiry based upon empirical observation that seeks to provide coherent, reliable, and testable explanations of empirical phenomena and that rejects all accounts, descriptions, and analyses that are either not falsifiable or that have been decisively falsified.” Of course, I was following some well-established anthropological precedents. Pelto and Pelto (1978:22), for example, define science as “the structure and the processes of discovery and verification of systematic and reliable knowledge about any relatively enduring aspect of the universe, carried out by means of empirical observations, and the development of concepts and propositions for interrelating and explaining such observations.” Harris (1979:27) maintains that science “seeks to restrict fields of inquiry to events, entities, and relationships that are knowable by means of explicit, logico-empirical, inductive-deductive, quantifiable public procedures or ‘operations’ subject to replication by independent observers.” I now recognize, however, that objectivity is the defining quality of science, and that science is empirical as a consequence of objectivity, not as a condition of objectivity.

4 The fact that scientific knowledge is not absolutely certain knowledge in no way diminishes the unique value and demonstrable superiority of the scientific approach. As Watson (1991:276) notes, “public, objective knowledge of the world including human beings is not certain, but neither is it merely one interpretation out of many, each of which is no better than any other.” When it comes to the acquisition of factual knowledge, the scientific method has a record of success that far outshines any other epistemological approach. The reliability, predictability, generalizability, and usefulness of scientific knowledge are simply unparalleled; the vindication of the scientific method on pragmatic grounds is decisive.

5 The term “paranormal” was first popularized by parapsychologists, but is likely to be most familiar to anthropologists through the efforts of The Committee for the Scientific Investigation of Claims of the Paranormal. CSICOP, which was founded in 1976 by the philosopher Paul Kurtz, is a national organization of philosophers, natural scientists, social scientists, physicians, engineers, attorneys, journalists, magicians, and other skeptical people committed to the rational analysis of paranormal claims. The organization includes a number of anthropologists among its Fellows and contributors to its quarterly journal, The Skeptical Inquirer.

6 Joseph K. Long’s (1977) edited volume Extrasensory Ecology: Parapsychology and Anthropology is perhaps the most regrettable example of the irrational approach to the paranormal within cultural anthropology. The
collection can be described, somewhat charitably, as one of the saddest and silliest books ever published under an anthropological aegis. Long’s gullibility and flagrant disregard for rational principles of evidential reasoning are egregious. He baldly states, for example, that “ghosts, astral projections, and poltergeists are real” (1977:viii), he describes levitation as “probable” (1977:384-385), he claims that at least some so-called “psychic surgeons” (who are really sleight-of-hand artists) have successfully performed barehanded operations on human patients that involve “deep and random cutting, extraction of parts, and immediate healing of the wound leaving virtually no scar” (1977:375), and he endorses the transparently fraudulent “psychokinetic” stunts of the Israeli showman Uri Geller as genuine (1977:248).
TEST QUESTIONS

1. The American anthropologist Victor Turner coined the term ___________________ to refer to the intense feelings of fellowship and camaraderie that are characteristic of the middle stage of rites of passage.

2. A wedding is an example of a rite of ___________________.

3. As depicted in the film *The Art of Living*, the proverb which states that “you must go through the smoke to get to the fire” is a characteristic expression of the world view of the ___________________.

4. The form of religious organization that is centered on the services of paranormal specialists who derive their authority from being ordained into an ecclesiastical hierarchy, and that includes belief in a supreme anthropomorphic deity, is called ___________________ organization.

5. Rituals intended to influence individual beliefs and behaviors for the sake of the group as a whole are called rituals of ___________________.

6. As explained in the film *Warriors of the Amazon*, on average ___________ percent of each Amazonian Indian community dies within the first 100 years of contact with outsiders.

7. States have ___________________ type(s) of religious organization.

8. As Conrad Kottak explains in *Cultural Anthropology*, art in Europe can be traced back at least ___________ years to the Upper Paleolithic period.

9. A rite of reversal is one type of ritual of ___________________.

10. Exorcism is an example of a ritual of ___________________.

11. The major world religion of Christianity traces its origins to a ritual of ___________ that occurred among the indigenous cultures of the Middle East approximately 2,000 years ago.

12. In anthropological terms, ministers, pastors, rabbis, and mullahs would all be called ___________________.

13. As described in the film *Warriors of the Amazon*, the bodies of dead Yanomami are entombed in ___________________.

14. A paranormal specialist who derives his or her authority directly from the supernatural is called a(n) ___________________.

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15. As explained in the article *Science, Religion, and Anthropology*, all paranormal beliefs in all cultures in the world are either [falsifiable or nonfalsifiable?] or [falsified or unfalsified?].

16. When Tulsa-based evangelist Oral Roberts attempted to cure people suffering from cancer and other serious ailments by placing his hands on them and shouting “Lord, Heal This Invalid!” (or some similar incantation), he was conducting a ritual of ____________._

17. As Conrad Kottak explains in *Cultural Anthropology*, the American cultural myth of *The Wizard of Oz* has many point-by-point similarities with the American cultural myth of ____________._

18. The form of religious organization that is centered on the activities of a group of ordinary people who are temporarily authorized to carry out paranormal roles, and that includes belief in various equal anthropomorphic deities who control aspects of nature, is called ____________._

19. A rite of solidarity is one type of ritual of ____________._

20. Rituals intended to renew cultural identity when that identity is seriously threatened (by conquest, for example) are called rituals of ____________._

21. As depicted in the film *The Art of Living*, the Dogon can be found in the country of ____________, and the Wodaabe can be found in the country of ____________. 

22. The middle stage of a rite of passage, first identified by Arnold van Gennep in 1909, is called ____________._

23. Tribes have ____________ type(s) of religious organization.

24. As depicted in the film *The Art of Living*, the Dogon seek to harmonize life and death in the Dance of the ____________. 

25. As Conrad Kottak explains in *Cultural Anthropology*, the term ____________ refers to an object or event that evokes an aesthetic reaction; it might also be defined as the quality, production, expression, or realm of what is considered beautiful and/or of more than ordinary significance.

26. Rituals intended to renew individual identity when that identity is seriously threatened (by spirit possession, for example) are called rituals of ____________. 

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27. Commencement ceremonies (such as those in the contemporary United States) are examples of rites of _____________________________.

28. As described in the film *Warriors of the Amazon*, the spiritual beliefs of the Yanomami ____________________ [are or are not?], falsifiable and unfalsified; in comparison, the spiritual beliefs of Christians in the U.S. ____________________ [are or are not?] falsifiable and unfalsified.

29. The form of religious organization that is centered on the services of paranormal specialists who derive their authority directly from the paranormal realm, and that includes belief in zoomorphic deities and spirits of natural phenomena, is called ___________________________.

30. Bands have ____________________________ type(s) of religious organization.

31. A religious specialist who derives his or her authority by being ordained into an ecclesiastical hierarchy is called a(n) _____________________________.

32. As explained in the article *Science, Religion, and Anthropology*, rational beliefs are beliefs that are both ____________________________ [falsifiable or nonfalsifiable?] and ____________________________ [falsified or unfalsified?]?

33. When erstwhile Presidential-candidate and clergyman Pat Robertson allegedly persuaded a hurricane to veer away from Virginia Beach (striking Long Island instead and sparing his television studio) by invoking the power of the supernatural realm, he was conducting a ritual of _____________________________.

34. In anthropological terms, psychics, palm readers, spirit channelers, and clairvoyants would all be called _____________________________.

35. As explained in the film *Warriors of the Amazon*, the Yanomami are able to identify and use a total of about ____________________________ species of plants.

36. A rite of passage is one type of ritual of _____________________________.

37. Divination, such as palm reading, is an example of a ritual of _____________________________.

38. As Conrad Kottak explains in *Cultural Anthropology*, the various human activities that might be called “the arts”—including literature, painting, sculpture, music, and drama—are also sometimes called ____________________________ culture.

39. Sabbath worship services are examples of rites of _____________________________.

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40. As explained in the film *Warriors of the Amazon*, the Yanomami believe that all events in life happen as a result of _________________.

41. The form of religious organization that is centered on the services of paranormal specialists who derive their authority from being ordained into an ecclesiastical hierarchy, and that includes belief in a pantheon of polytheistic gods with counterbalancing powers and alliances, is called ________________ organization.

42. As portrayed in the film *The Art of Living*, the young unmarried woman who is the focus of the segment on the Wodaabe seeks to achieve grace and elegance in the art of ________________.

43. Self-proclaimed “psychics” in the United States are paranormal specialists who would be classified as ________________ by anthropologists.

44. Chiefdoms have ________________ type(s) of religious organization.

45. Which of the following is/are NOT characteristic of the ritual stage of liminality, as described by Victor Turner: (a) transition (b) permanence (c) homogeneity (d) heterogeneity (e) equality (f) inequality (g) anonymity (h) individuality (i) sexual continence or sexual excess. [*The answer could be all, some, or none of these.*]

46. As Conrad Kottak explains in *Cultural Anthropology*, military basic training constitutes a collective rite of ________________.

47. The Sioux Ghost Dance phenomenon of the American West in the late 19th century was an example of a ritual of ________________.

48. ________________ can be defined as beliefs and behaviors concerned with the supernatural (i.e., paranormal); such beliefs and behaviors are a cultural universal.

49. A funeral is an example of a rite of ________________.

50. Among the Wodaabe, as depicted in the film *The Art of Living*, the fire metaphorically represents the ________________ [dry or rainy?] season, and the smoke metaphorically represents the ________________ [dry or rainy?] season.