

AR 202 Archaeological Mysteries Pseudoscience in the Human Past

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According to “alternative archaeologists” the Egyptian Pyramids have magical powers, or were fantastic power generators, or markers to help alien flying saucers find their way around the world. The Lost Continent of Atlantis is out there somewhere waiting to be found and there are mysterious statues on a remote Pacific island that moved by themselves. Alternative archaeologists argue that “true” history is being covered up through a conspiracy of silence by the “archaeological establishment.” Many alternative claims about the past are accepted today by many people as genuine science, yet these claims are pseudoscience: they look like science, but they’re not.

This is a serious problem because “alternative” history and pseudoscience overshadow real archaeological mysteries. Why do people believe these claims? Do the media bear any responsibility for these claims, or is every claim acceptable because it “is only entertainment?”

Scientists call a proposed explanation for something a “truth claim.” Professional academic archaeologists and alternative archaeologists both make truth claims about the past that may look similar. How do we distinguish between science and pseudoscience, particularly if we are not familiar with the evidence and are not trained scientifically in the field in question? Fortunately the scientific method exists for evaluating the validity of a truth claim and this method has wide applicability in daily life.

This course will teach you how to distinguish between a scientific claim and a pseudoscientific claim in any field. In practice you will master the skills needed by evaluating a series of fantastic claims in archaeology.

Course Goals

Acquire literacy in media and science

Learn to evaluate extraordinary claims—no matter what their source

Understanding epistemology and the scientific method

Examining the origins and intellectual underpinnings of popular archaeological mysteries which are analyzed through lecture presentations, course discussions, and other assignments

Exercises are designed to use the scientific method to recognize whether a truth claim is supported by adequate evidence

Develop a skeptical approach to truth claims that will be useful in any situation

Learning Outcomes

This course fulfills one unit in each of two **BU Hub Requirements:** Historical Consciousness (HC) and Critical Thinking (CT).

1. Historical Consciousness

Pseudoscientific claims have specific origins and must be understood in the context of the history of ideas. Where do these ideas come from? Who has proposed them? How have they been interpreted in previous time periods? Why have they been repeated in recent times?

An understanding of the origins of pseudoscience in archaeology is obtained through case studies derived from media sources that are analyzed individually and in small groups.

The historical grounding of pseudoscience is necessary for the interpretation of public acceptance of alternative claims through case studies. Why does pseudoscience appeal to the public? What harm may this do? What can be done about it? Weigh arguments presented by different authorities on this topic and consider the possible public policies or educational practices necessary to counter the influence of pseudoscientific claims in the modern world.

2. Critical Thinking

The purpose of the training in critical thinking is to improve media and scientific literacy.

This is done by breaking down the specific defined scientific method employed in this course and understanding the principles on which it is based.

The objective is to foster the skills and the habits of mind necessary to analyze scientific claims in the media because information is increasingly generated or augmented by Artificial Intelligence and spread rapidly by social media.

The flood of unfiltered and unverified “information” requires each individual to evaluate the claims on their own.

The ability to understand truth claims in science through the use of the scientific method based on lateral sourcing, skepticism, hypotheses, and evidence is a vital skill for modern life.

Critical thinking skills are practiced by interpreting alternative archaeological case studies with Lateral Sourcing methods and the structured scientific analysis of truth claims.

Assignments and Grading

The final course grade is based on class participation and analyses of archaeological mysteries through.

There are 3 Problem Sets, the last of which serves as the Final Exam.

Two take-home Problem Sets (30% each) support the Hub goals and scientific/media literacy. The output can be creative (see below).

A final take-home Problem Set (30%) at the end of the semester is completed as a PowerPoint presentation. It is the equivalent of a Final Exam and is based on questions provided in advance.

In-class discussions (Critical Thinking Exercises) make up the final 10% of your grade.

Problem Sets may be completed in more than one format, for example as a formal essay, a short video, a podcast, a work of fiction, a PowerPoint presentation, or another form of creative expression. They may be completed individually or in teams (preferred format). Details and deadlines guidelines for the Problem Sets will be posted on Blackboard under Assignments.

Grading will be based on the identification of primary and secondary hypotheses and the evaluation of truth claims using different methods such as Lateral Sourcing, the Lie Detector, Hypothesis Diagramming, and Occam’s Razor.

Using AI

The use of generative AI is recommended. All AI use must be acknowledged. You are free to use any app that is helpful and cited by name (DeepSeek, TerrierGPT, ChatGPT-5). Suggestions for how to use and acknowledge AI will be discussed in class. Possible uses include brainstorming ideas, identifying legitimate sources, developing outlines, and checking grammar. It is important to use AI to increase your AI literacy and understand how to use AI appropriately in an academic context. AI will return incomplete, incorrect, and/or biased information, along with fake citations or sources, and

all information from AI must be fact-checked and acknowledged. It is your responsibility to ensure that all information presented in assignments is true, correct, and accurate.

You should familiarize yourself with BU policies on plagiarism, cheating in Boston University's Academic Conduct Code at
<http://www.bu.edu/academics/policies/academic-conduct-code/>

Readings and References

Kenneth Feder, *Frauds, Myths, and Mysteries: Science and Pseudoscience in Archaeology* (11th edition). This textbook provides background detail on most of the topics in the course, though the author's conclusions are not always the same as the course instructor's.

Suggested reference works for problem sets and in-class exercises.

Card, Jeb, 2016, *Spooky Archaeology: Myth and the Science of the Past*.

A provocative look at the interplay between archaeology in the 19th and 20th centuries with occult and paranormal movements and how mainstream archaeology contributed to the portrayal of the past as "mysterious" and "magical."

Ellis, Richard, 1999, *Imagining Atlantis*.

Outlines the long history of theories about Atlantis and speculates about why this subject fascinates so many people.

Fagan, Garrett G., 2006, *Archaeological Fantasies*.

This book has chapters on most major stories from Ancient Atlantis to lost continents. It describes the scholarly approach to addressing them.

Fritze, Donald, 2009, *Invented Knowledge: False History, Fake Science and Pseudo-Religions*.

Similar to Garrett Fagan's book, Fritze goes beyond the field of archaeology to examine pseudoscience and popular delusions in other areas of science.

Jordan, Paul, 2001, *The Atlantis Syndrome*.

Examines the fascination of scientists and the public with the story of Atlantis from an historical perspective.

Kehoe, Alice Beck, 2008, *Controversies in Archaeology*.

A well-known "mainstream" archaeologist explores the difficulties that confront anyone attempting to interpret the past. Kehoe is open minded about some controversial topics and shows how they can be explored while staying true to science. This book is proof that professional archaeologists are not concealing or shying away from controversial "alternative" claims about the past.

Pauwels, Louis and Jacques Bergier, 1968, *The Morning of the Magicians*.

This pseudoscientific book introduced the public to most “alternative” ideas about the human past such as magic and the occult in ancient Egypt, Atlantis and lost continents, Ancient Aliens, and much more. It is the one book to read if you want to get a feeling for the appeal of pseudoarchaeology to the public in the twentieth century.

Sagan, Carl, 1995, *The Demon-Haunted World: Science as a Candle in the Dark*.

In his last book the eminent astronomer Carl Sagan explores the on-going erosion of faith in science in the United States and the rest of the world and explains how science works, why it is important and is the best method for learning about the natural world, and why pseudoscience is so dangerous to our civilization as a whole. It should be required reading for everyone in the world.

von Däniken, Erich, 1969, *Chariots of the Gods?*

This is the source of the modern popular interest in the idea of Ancient Aliens and the place to start if one wants to understand the motivations of Ancient Aliens theorists today.

Be careful when you read *anything* about alternative archaeology. There are web sites that provide scientifically accurate information about controversial topics in archaeology such as www.csicop.org hosted by the Committee for the Scientific Investigation of Claims of the Paranormal (CSICP), the Archaeological Institute of America www.archaeological.org, and *Archaeology Magazine* www.archaeology.org.

Topics (Scheduling is approximate; roughly a week for each module which may change depending on in-class activities and discussions)

Introductory case studies illustrating pseudoscience and the methods for determining what is a valid scientific claim. The interpretations offered by professional archaeologists and alternative archaeologists offer different explanations of what happened in the past. The methods they use to reach their conclusions may appear similar but they are different. Learning to use the scientific method to evaluate truth claims is the first step. Case studies: The Dover Demon and Noah’s Ark. Reading: Feder, chapter 1.

The case of the Pyramids of Bosnia illustrates how the scientific method is used to evaluate a truth claim that may seem compelling. Reading: Feder, chapters 3 and 4; Garrett G. Fagan, ‘Diagnosing pseudoarchaeology,’ and Carl Sagan, pp. 203-218 and 338-351.

The scientific method is based on skepticism and the concept of testable hypotheses. Important tools in the intellectual toolkit are outlined in Carl Sagan’s “Baloney Detector,” Feder’s textbook, the instructor’s Lie Detector (on the web site), and Occam’s Razor.

Reading: Feder, “My Pseudoscience Cheat Sheet” (p. xix), and chapter 2; Carl Sagan, pp. 3-39. A summary worksheet for evaluating truth claims will be distributed in class.

A growing field of alternative archaeology is called Ancient Aliens Theory. This is based on the claim that aliens from outer space visited the Earth in the past and influenced ancient civilizations and altered the course of human history. Reading: Feder, chapter 10.

The series *Ancient Aliens* on the History Channel introduced Ancient Aliens Theory to the public and polls indicate that a majority of people in the United States and other parts of the world believe this theory. Reading: Erich von Däniken, *Chariots of the Gods?*

Is Ancient Aliens Theory science or pseudoscience?

The Lost Continent of Atlantis has captivated the public’s imagination for 2,300 years and continues to fascinate historians, archaeologists, and enthusiasts. Is there a real Atlantis and can it be found? Reading: Feder, chapters 9-9; Ronald H. Fritze ‘Mother of Pseudohistory;’ Paul Jordan ‘Why?’ and Richard Ellis “Conclusion.”

Is there a common theme to the many claims for “lost” civilizations? Is there a hidden political agenda or conspiracy behind them? Reading: Feder, chapter 7; Ronald H. Fritze on ‘Hapgood’.

Alternative archaeologists make claims about the “true” history of the Americas before the time of Columbus, with claims such as the existence of a “Stonehenge” in New Hampshire. Are these claims based on a political agenda? Reading: Feder, chapters 5 and 6; Alice Beck Kehoe, chapters 7 and 8.

A real “lost civilization” with advanced technology did exist in the distant past. You might have been there.

Egypt has dominated popular imagination for hundreds of years. The Egyptian Pyramids are claimed to have fantastic powers based on occult powers and forgotten technology. Popular enthusiasm for all things Egyptian is called *Egyptomania*. Reading: Feder, chapter 11.

Alternative claims focus on the Great Sphinx in Egypt. We examine two claims, both made by reputable scientists at the same institution. How do we know which one is “best” or most likely to be correct based on the available evidence when we are unfamiliar with the science behind the claims? Reading: Feder, chapter 12.

Other fantastic claims focus on prehistoric monuments such as Stonehenge in the United Kingdom. Where do these ideas come from? Could they be true? Reading: Feder, chapter 13; Pauwels and Bergier, *Morning of the Magicians*.

What is the harm in presenting pseudoscience in the media? Do alternative theories have negative impacts, political, social, economic, or racial? What can we do about pseudoscientific memes? Reading: Fagan, chapter 14.