Essay # 3: Testing a theory

Purpose:

To think about the causes of the emergence of civilization and the archaeological evidence about the process. To try your hand at the kind of analytical thinking that archaeologists and other social scientists engage in.

Pick your subject by selecting:

1. Any definition of civilization from *Some definitions of "civilization" and "complex society"* other than the "short list" definition

2. A region that we have covered in class: Mesopotamia, Egypt, etc.

3. The period in that region during which you feel that civilization first existed, based on the definition and archaeological evidence.

4. A theory of the emergence of civilization from the following list:

   The "social surplus" theory (V. Gordon Childe)
   The "circumscription" theory (Robert Carniero)
   The "success in competition" theory (William Sanders and Barbara Price)
   The "war finance" theory (David Webster)
   The "managerial benefits" theory (Elman Service) (Could be hard to test!)
   The "economics of population growth" theory (Allen Johnson and Timothy Earle)
   The "resource-deficient core" theory (William Rathje)

   Note that several theories are NOT to be used for this assignment, specifically:

   The "hydraulic hypothesis" (Karl Wittfogel)
   The "individual and class strategy" approach (Elizabeth Brumfiel and others)
   The "cybernetic" or "systems analysis" approach (Kent Flannery)
   The "evolutionary convergence" theory (Ronald Cohen)

What you turn in:

A three to five page essay, plus bibliography. It should cover the issues below.

Content:

1. Specify the region that you are discussing, the definition of civilization that you are using, and the theory that you are evaluating. Be sure that you are evaluating a *theory* about *how* civilization emerged, not a *definition* of *what* civilization is.

2. Specify when you think civilization emerged in your region. That is, name the period which you think was the first in that region to meet the criteria of civilization, according to the definition that you are using. You do not need to defend your claim the way you did in the previous paper. Still, you may want to mention what it was about this period that pushed it over the line to qualify as a civilization. That might offer a clue about what processes were important in the emergence of civilization.

3. Explain some test implications of the theory. Test implications are statements of evidence that you would expect to find if the theory were true. You might also think of some negative test implications, which are evidence that you would expect to find if the theory were false. For

example, the hydraulic hypothesis involves large canal systems. So, a test implication of the hydraulic hypothesis is that traces of large canals should be found that date to the time when civilization emerged, or shortly before. Try to think of test implications for all the important features of the theory. If some aspects of the theory would leave no evidence, explain that. This section is the road map for the rest of the paper: it tells you exactly what you should look for to evaluate whether or not the theory is actually correct for this region.

4. Evaluate whether or not the theory is true for your region. Do this by checking to see if the test implications are met, using evidence from the period when civilization first appeared and the periods immediately before. That is, show whether or not the processes proposed in the theory actually occurred. Review the reading *How to evaluate a theory* for guidance (this was assigned together with the first batch of theories). This is the "meat" of your paper.

   a) Be careful to use evidence from relevant periods. Civilization must have been caused by things that happened before or at the same time as it appeared. Something that happened *after* civilization could not have caused it.

   b) Score how well the theory explains this case on a scale of 1 to 10, where a "10" means that the theory is an excellent explanation, and a "1" means that the theory does not fit this case at all.

   c) Justify this score by explaining how *specific, concrete evidence* about the region from the readings, lectures, and/or other sources *supports* or *contradicts* the test implications, and by explaining how you balanced these arguments to arrive at the score.

   d) Often, the evidence supports some parts of a theory, but not others. A theory might fit your case if you make minor changes to it, or a theory may explain some aspects of the case, but not others. Conclusions like these are OK, as long as you explain them. Still, assign a score and defend it.

5. Include a bibliography with the complete reference information for all the materials you cite in the essay. The bibliography is not counted in the essay's length.

You may arrange these points in any structure that you like. Some students like to explain all the test implication first, then check the evidence about them. Others prefer to explain one test implication, evaluate it with some evidence, and then go on to the next. There may be other good approaches, too.

Be plain and clear. Explain *how* the evidence you mention supports the point you are making. Give all the necessary facts, and write so directly that your mother would understand your argument. Do not assume that I will know what you are trying to say; it is your job to say it.

Please do not waste your limited space by quoting or summarizing the definition or the theory except as needed to refer to it.

Be concise. Say what is necessary to support your case and to explain your conclusions. Edit out everything else.

Sources:

As with the previous essays, Cite *at least three sources* of archaeological information, *in addition* to the source of the definition. Every item in the bibliography must be cited at least once in the

text. You need not do additional research for this essay, although you are welcome to do so if you wish. Using evidence from the readings, class notes, and slides is sufficient. Online sources are OK *if they are reliable sources* like academic articles from the article databases available through the library website, the official websites of serious archaeological projects or museums, or websites of most domains that end in ".edu". Avoid sources affiliated with a religion, or that seem amateurish. If in doubt, email the reference or URL to me for advice.

Paper format:

Computer print your essay in 12 point type, double spaced or space-and-a-half. Three to four pages should be sufficient. Your writing should be grammatically correct, properly spelled, and in appropriately academic style. Try to be both thorough and concise.

Citation and bibliography format:

All information and ideas, including the definitions, must be properly cited in the text. Include a bibliography with the full references. *Follow the citation and bibliography style guide attached to this assignment sheet*. This style guide is identical to that for the first two essays. I will deduct points for missing or significantly incorrect citations or bibliography.

Turning it in:

Turn in the essay BOTH on paper, AND as a file attached to an email message to me. I will return the paper copy with comments and a grade written on it. The paper copy is due in class on the day indicated on the class web site. The computer file OF THE IDENTICAL PAPER is due by midnight of that day. I must have BOTH versions to give you credit. Name the file in this format:

> 341-09s-Essay3-LastnameFirstname

Replace "LastnameFirstname" with your name, last name first, capitalizing the first letter of each name. Your word processor may add a 3-letter file extension like ".doc" or ".wks".

Drafts:

You are welcome to discuss your assignment with me or give me a draft to review before the assignment is due. My comments and suggestions may help you write a better essay and get a better grade. If you email a draft, please include a message saying that this is a draft and that you would like some comments, and name the file as above, but add "-draft", like

> 341-09s-Essay3-SmithJane-draft.doc

Allow at least a day or two for me to respond, and for you to make any revisions.

Grading:

This essay is worth 150 points, out of 1000 for the course.

Citation and Bibliography format

The citations and bibliography or "References Cited" section in this paper must be in the format used in the premier American journal of archaeology, *American Antiquity*, published by the Society for American Archaeology. Formats similar to this one are used in many anthropological and archaeological publications. The full details of this format, with examples, are given in

http://www.saa.org/Portals/0/SAA/Publications/new style guide.pdf

You can click to the full style guide from the "SAA Style Guide" link on the class web page.

The condensed guide below should cover what you need to know for this paper, including instructions on how to cite the class materials.

Citations in the text

All direct quotations must be enclosed in quotation marks and have the bibliographic source indicated. Everything inside the quotation marks must be exactly what the author wrote. You may edit parts out, indicating where something is missing with ellipses enclosed in brackets. For example:

   "Males […] seem to have a minor role in the beliefs of the time" (Fairservis 1975:155).

Even when you use your own words to explain the information (as you should most of the time), you must still give the source. All factual information that is not common knowledge and has not been discovered by you personally, whether quoted or rephrased, must have the bibliographic source indicated. Common knowledge does *not* include most of the archaeological data and theories in this course, nor does it include much of what you find in reference books. Material from class materials like the posted notes, slides, and readings by me must be cited correctly, too.

To identify a source, include the last name of the author, year of publication, and page number directly in your text between parentheses, as in (Emery 1991:42). If the source is an extract such as many of our online readings, the page number should be that of the original publication as shown on the pages themselves, not the page count within the pdf file. If a book has been republished, the year is the latest one listed in the source. Multiple pages are shown as (Hyslop 1984:116-137). Sources with two authors are shown as (Johnson and Earle 1987:10). Sources with three or more authors are shown with just the first author named, as in (Sanders et al. 1979:121). Citations in the text normally belong at the end of the sentence, phrase, or idea that came from that source. For example:

  Enormous quantities of crude beveled-rim bowl fragments were found at Uruk sites (Wenke 1990:338). These bowls, though "surely one of the ugliest ceramic types ever made" (Wenke 1990:338), appear to be the first mass-produced, standardized, disposable containers ever made (Adams 1960:9).

If the information in several sentences comes from a single source, include the reference only once, at the end of the information. For example:

  The Mature Indus civilization extended over almost 500,000 square miles. Harappa and Mohenjo-daro are the two largest well-known sites, possibly political capitals, while a number of similar but smaller sites seem to be subsidiary centers. Several of the major sites share a similar city plan (Allchin and Allchin 1982:167-171).

If information from several sources is mixed into one sentence or paragraph, citing each one after every bit of information could distract from the flow of the writing. In this case, it is acceptable to lump the references together at the end of the sentence or paragraph, separated by semicolons. For example:

A large Early or Middle Shang site at the modern city of Zhengzhou was surrounded by a massive rammed-earth wall that is estimated to have required 200,000 man-years to build. The wall may have been more to restrict access to the elite residential and ceremonial zone than for actual defense (Barnes 1993:126; Chang 1986:331-339; Whitehouse and Wilkins 1986:70).

Exercise judgment when lumping references in this way. Piling all the references at the end of every paragraph is rarely appropriate. This method is never acceptable for direct quotations, which should always have the reference immediately after the quoted material.

It sometimes helps the flow of your writing to refer directly to an author by name. In this case, only the date and page number go in parentheses. For example:

According to Prescott (1961:254), the Inka Atahuallpa's translator worked against him.

If you cite multiple sources by the same author from the same year, indicate which is which by adding a lower-case letter after the year. For example:

Shang China was a civilization, according to the "Wasteful Definition" (Owen 2009a:4), yet the Shang capital was not densely urban in the way that western cities are (Owen 2009b:4-5).

Only cite sources that you have actually read. Do not list citations from other works if you have not read them yourself. If you want to cite a fact or quotation that is given in another work and you cannot find the original reference, do so honestly by writing something like "Smith estimated that the site had 2000 inhabitants (cited in Jones 1992:143)." In this case, you have not seen the original work by Smith, but you read about it in Jones (1992:143). You cite Jones as your source, and you include Jones, not Smith, in the list of references cited at the end of the paper.

Unless you look up the original sources of the definitions and theories we use in this class, you cannot cite the original authors, because you have read only my condensed version of their work, not their actual words. It is still good form to give the original author credit, though. For example, you could cite the "Long list" definition of civilization like this:

According to Redman's "long list" definition (Owen 2009a:1), civilizations have cities.

The extracts from articles and books posted on the class website are equivalent to photocopies of the original work. Cite them as if you would the entire publication, giving the original author, date, and page shown in the extracts, not as Owen 2009. They wrote it; I only made a copy for you to download.

Material from the Internet must also be cited correctly. In the text, give the author, year, and page number (if appropriate), just as for any other reference. You may have to search the site to find the author's name; there is often a "credits" page, or a page about the author. The author may be an institution, like Encyclopedia Britannica, if no person is specified. The date is preferably one specified on the page itself. If no date is given, use the year in which you looked at the page.

List of references

After the text of the paper, include an alphabetized list of references titled "References Cited". Every citation in the text must have an entry in the list, and every reference in the list must be cited at least once in the text. Do not include sources you looked at for general background but did not actually refer to in the text. Write out first names of authors, rather than using initials. Book and journal titles are italicized, but chapter and article titles are not, so that each published reference has a single italicized title. A typical book reference looks like:

Trigger, Bruce G.
   1993   *Early Civilizations, Ancient Egypt in Context*. The American University in Cairo Press, Cairo.

A typical journal article reference has the volume (often the year number) of the journal, with the issue number in parentheses, followed by a colon and the pages of the article. For example:

Adams, Robert M.
   1960   The Origin of Cities. *Scientific American* 203(3):153-168.

The example above is an article in volume 203 of *Scientific American*, issue 3 (probably March), pages 153-168, published in 1960.

If there are multiple authors, only the first one is written last-name first. The rest are in normal order, in the order given in the publication. For example:

Whittaker, John, and Michael Stafford
   1999   Replicas, Fakes, and Art: The Twentieth-Century Stone Age and Its Effects on Archaeology. *American Antiquity* 64(2):203-214.

Web pages should also be included in the list of references. The general format is:

Author's Last Name, First Name
   Year   Title. Electronic document, <internet address>, accessed <full date>.

Khan, Omar
   1997   The Ancient Indus Civilization. Electronic document, http://www.harappa.com/har/har1.html, accessed February 27, 2008.

Posted class notes, slides, and readings by me should be referenced as internet resources, since they are available only from the class website. For example:

Owen, Bruce
   2009a   Some definitions of "civilization" and "complex society". Electronic document, http://bruceowen.com/emciv/pw/341-09s-Definitions-CivAndComplexSociety.pdf, accessed February 28, 2009.
   2009b   The emergence of civilization in Mesopotamia: 'Ubaid and Uruk. Electronic document, http://bruceowen.com/emciv/341-09s-09-UbaidUruk.pdf, accessed February 27, 2009.

Note how multiple items by the same author are lumped together below the author's name, which is only listed once. The lower-case letters are arbitrary and assigned by you to whatever items you use by the author with the same date in this particular paper. Another paper might use "Owen 2009b" to refer to a different item.